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Moving Toward Meltdown

Racks of ultracompact blade servers produce an amazing amount of heat that can lead to equipment failures or slowdowns. Now data center managers have to figure out how to keep this hot technology cool. **Page 25**



JORDIN ISIP

Cisco Reiterates WLAN Threat

Attack tool targets authentication code; long passwords urged

BY BOB BREWIN

Cisco Systems Inc. last week said it plans to issue a new — and better publicized — warning about a security threat to its user authentication technology for wireless LANs, after it was told that a tool for attacking the software would be publicly released.

Cisco first disclosed in early August that its widely used Lightweight Extensible Authentication Protocol algorithm is vulnerable to so-called dictionary attacks aimed at discovering user passwords. The company posted a notice on its Web site and said its sales force was told to inform customers about the threat. But several Cisco users last week said they never got word of it.

Mike Wiesenberg, director

of network services at Sharp HealthCare in San Diego, faulted Cisco for not taking “a more proactive” approach to notifying LEAP users of the potential for attacks. Wiesenberg said he doesn’t check Cisco’s Web site on a daily basis for security updates and

WLAN Threat, page 13

The Trouble With LEAP

What if the LEAP algorithm, which is used to authenticate users to network devices, is known to network administrators and dual PCs.

What if the most password-based authentication (LEAP) is susceptible to dictionary attacks.

What if the most password-based authentication (LEAP) is susceptible to dictionary attacks.

What if the most password-based authentication (LEAP) is susceptible to dictionary attacks.

Pentagon Moves On Massive HR System – Slowly

Prime contractor chosen for \$320M project two years after purchase of PeopleSoft apps

BY MARC L. SONGINI

More than two years after it chose PeopleSoft Inc.’s software for a massive human resources system, the U.S. Department of Defense is finally ready to start development work on the \$320 million-plus project. But it will take another four years to complete the rollout, military officials said.

The project, which is about 12 months behind schedule, will create a single system for HR and payroll operations across all branches of the armed forces, incorporating data on more than 3 million military personnel worldwide. The DOD paid PeopleSoft \$48 million for an enterprise software license in

August 2001, and last week it named Northrop Grumman Corp. as the prime contractor on the implementation under a nine-year, \$281 million contract.

U.S. Navy Capt. Valerie Carpenter, the joint program manager, said the HR project will replace 79 systems within the DOD. She added that Pentagon officials in February plan to release projected ROI figures for the initiative, which is officially known as the Defense Integrated Military Human Resource System, or DIMHRS.

The DOD project will be the largest installation of PeopleSoft’s human resources application.

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IN DEPTH

For details on the DOD’s ERP project, visit our Web site: [QuickLink a3660 computerworld.com](http://www.quicklink-a3660.computerworld.com)

IBM Hosting Goes On-Demand

Remote data center service takes ASP tack; offshore is an option

BY PATRICK THIBODEAU

A plan unveiled by IBM last week may ultimately help make the location of a corporate data center largely irrelevant, even allowing for data centers that are outsourced offshore.

IBM has broadened its remote Virtual Server Services, which had been offered only

on its zSeries servers, to include the rest of its eServer line — iSeries, pSeries and xSeries servers — with support for Windows, Unix and Linux.

The company is also adding applications to its on-demand computing services under an application service provider model. Officials said IBM had inked an agreement with Siebel

IBM Hosting, page 53

INSIDE

IBM will host slimmed-down Siebel CRM apps, ASP style. **Page 53**

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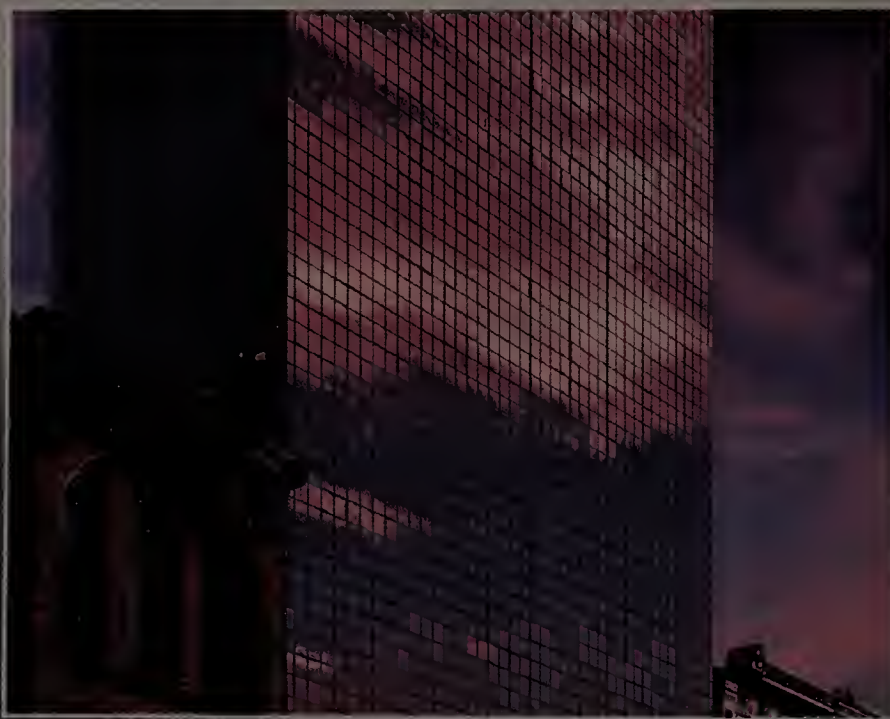
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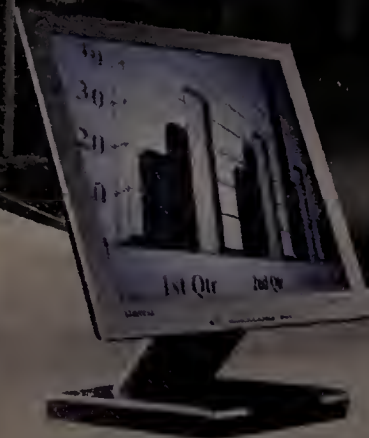
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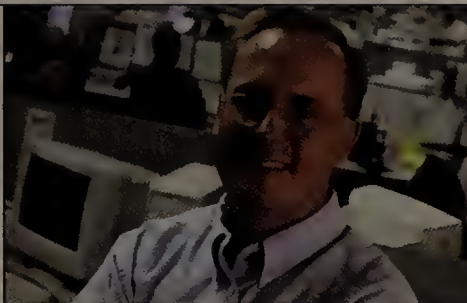
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10.06.03

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Outsourcing BI With Control

In the Management section: Whether you farm out all or part of your business intelligence operations, the hot issue is making sure data quality won't suffer, says Mike Larson (left), a product and process quality leader at Canon Information Technology Services. **Page 37**

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DEPARTMENTS/RESOURCES

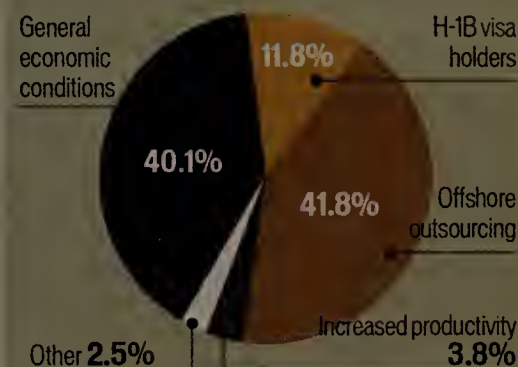
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ONLINE

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QuickPoll Results

The single biggest factor affecting IT unemployment is:



Take this week's QuickPoll at www.computerworld.com.

SOURCE: COMPUTERWORLD.COM NONSCIENTIFIC SURVEY, 1,112 VOTES

Is the Decay of Code Inevitable?

DEVELOPMENT: Developers often want to rewrite code that they are given to maintain. Maybe this practice should be required. **41717**

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Wireless Is 'In': Use It Wisely

SECURITY: Columnist Marcia Wilson understands the lure of Wi-Fi, but she also fears for those business travelers who don't consider the risks. **41665**

What's a QuickLink?

Throughout each issue of *Computerworld*, you'll see five-digit QuickLink codes pointing to related content on our Web site. Also, at the end of each story, a QuickLink to that story online facilitates sharing it with colleagues. Just enter any of those codes into the QuickLink box, which is at the top of every page on our site.

ONLINE DEPARTMENTS

- Breaking News
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- Newsletter Subscriptions
QuickLink a1430
- Knowledge Centers
QuickLink a2570
- The Online Store
QuickLink a2420

AT DEADLINE

IBM Makes Cuts
At IT Services Unit

IBM said that about 720 U.S. workers at its IT services unit are being laid off as part of a re-assessment of the operation's staffing and skill needs. The cut-back at IBM Global Services follows a similar layoff that was announced late last month by the company's software group [QuickLink 41712]. IBM Global Services currently employs about 180,000 people.

Siebel Expects Q3
Loss, Lower Sales

CRM software vendor Siebel Systems Inc. said it expects to report a loss of about \$60 million for the third quarter on revenue of about \$320 million. The San Mateo, Calif.-based company said it would be profitable if not for one-time expenses, including a \$107 million charge taken to cover recent layoffs. It added that software sales will total about \$110 million, down 13% from \$126.8 million a year ago.

Microsoft Targets
Small Businesses

Microsoft Corp. this week plans to release small-business software bundles that are built around Windows Server 2003 and tailored to companies with fewer than 100 workers and 50 PCs. The Windows Small Business Server 2003 offering includes a standard edition with Exchange Server 2003 and a premium version that adds SQL Server 2000 and Microsoft's Internet Security and Acceleration Server.

HP Tries to Lure
Sun Users to Linux

Hewlett-Packard Co. announced a program aimed at converting users of Sun Microsystems Inc.'s Unix servers to Linux systems. HP said it will offer users \$25,000 worth of assessment, porting and migration services at no cost.

Data Problems Thwart
Effort to Count H-IBsSystems lack ability
to share information

BY PATRICK THIBODEAU
WASHINGTON

FEDERAL OFFICIALS don't know how many H-1B visa holders are working in the U.S. because the two systems that collect critical data on visa holders aren't integrated.

That problem was detailed in a long-awaited General Accounting Office report released last week on the H-1B program's effects on the U.S. workforce. The GAO said its effort to study the matter was hindered on two fronts.

First, key data is missing. One system tracks entries and departures of H-1B holders, and another monitors changes in a visa holder's status, such as loss of employment. But

those systems aren't integrated, so the government doesn't know how many visa holders are in the U.S., the GAO said.

Second, the GAO contacted 145 companies to discuss their H-1B use, but only 36 agreed to interviews. While the nearly 50-page report anonymously summarizes the results of the interviews, the GAO warned that because of the small sample size, the results "cannot be viewed as representative of all H-1B employers."

Chris McManes, a spokesman for the U.S. chapter of the Institute of Electrical and Electronics Engineers Inc., which has opposed the H-1B program, said the small sample "limited the GAO's ability to assess

what's really going on."

McManes said the findings support arguments that H-1B workers are being paid less than their U.S.-citizen counterparts, at least in one age bracket. Salaries listed on approved H-1B petitions for either electrical/electronic engi-

neers or systems analyst/programmer analysts who were between 31 and 50 years old were about \$11,000 to \$22,000 lower than the salaries reported by U.S. citizens.

But the salaries of H-1B workers

18 to 30 years old were as much as \$10,000 higher than those of their U.S. counterparts, which may mean that there are more hires in this age group with advanced degrees.

FAST FACT

38%

of systems analysts and programmers holding H-1B visas have a graduate degree, vs. 14% of their U.S. counterparts.

SOURCE: GAO

HP Rolls Out Stackable
Gigabit Ethernet Switches

BY MATT HAMBLIN

Hewlett-Packard Co. today will announce several networking products, including a pair of stackable edge switches that it said can support Gigabit Ethernet transmission speeds.

The new HP ProCurve switches are priced at about \$100 per port, making them the most affordable Gigabit Ethernet switching devices now on the market for edge networking use, claimed Darla Sommerville, general manager of ProCurve networking in HP's Americas region.

The switches began shipping last week along with new ProCurve management software that HP said gives IT managers more network controls, including a single view of wired and wireless networks. HP also released a wireless access point device

that was announced last month and supports connectivity via the 802.11b and 802.11g protocols.

Richard Lee, director of operations at Media General Inc. in Richmond, Va., has been using a demonstration model of the 24-port ProCurve Switch 2824 for three months, moving it to different network locations to test it. Lee said he has ordered 20 more switches from HP because the demonstration device has proved to be effective.

For instance, Lee has used the switch to triple the speed of backing up data from Media General's 260 servers, which include IBM AS/400s plus computers running Windows, Unix and other operating systems. Many of the servers have built-in Gigabit Ethernet connections, "so it's advanta-

geous for us to have the speed in the switch," Lee said.

He added that Media General, a newspaper, TV and Internet company with 1,600 employees at its corporate offices, has found HP's switches to be reliable in the past, with upfront prices that were less than half the cost of comparable Cisco Systems Inc. switches.

Chad Williams, director of public-sector sales at Matrix Integration, a Jasper, Ind.-based company that resells and installs Cisco and HP products, said he generally can offer HP switches at half the price per port that Cisco charges. In addition, HP doesn't have an annual maintenance fee, while Cisco charges users about 25% of the upfront purchase price of a switch per year, Williams said.

HP's announcements will help round out its line of switches, which have been known more for data center switching than for WAN use, said Zeus Kerravala, an analyst

Thom Stohler, a vice president of the AEA, a trade group representing the high-tech industry that has advocated a higher H-1B visa cap, said the report underscores the need for better data. "We all need to be using the same data, or we cannot have rational a discussion," he said.

The H-1B visa, which allows skilled foreign workers to take jobs in the U.S. for up to six years, is limited by a cap that declined to 65,000 last week when the new federal fiscal year started. The cap had been 195,000 for the past three years.

Vic Goel, a Greenbelt, Md.-based immigration attorney, said the reduced cap will be reached by early next year, in part because about 22,000 pending H-1B applications filed in the last fiscal year will be counted against this year.

The U.S. Department of Homeland Security, which is now responsible for immigration policy, is aware of the visa-tracking problem and is developing a consolidated system, according to the GAO.

41884

HP'S NEW PRODUCTS

■ PROCURVE SWITCH 2824:

Supports 20 Gigabit Ethernet ports and four ports for either Gigabit Ethernet or mini-GBIC (Gigabit Interface Converter) connections.

Starts at \$2,499.

■ PROCURVE SWITCH 2848:

Supports 44 Gigabit Ethernet ports and four dual-mode ports.

Starts at \$4,899.

■ PROCURVE WIRELESS

ACCESS POINT 420 NA:

Includes two removable antennas and Power over Ethernet connections. Starts at \$469.

■ PROCURVE MANAGER

PLUS: Network management software that supports both wired and wireless networks.

Starts at \$1,999.

at The Yankee Group in Boston.

HP ranks third in total Ethernet switch revenue in North America, trailing Cisco and Marlboro, Mass.-based 3Com Corp., Kerravala said. 41813

CIOs Holding on to Their Jobs Longer

Weak economy, push for stability reduce turnover for execs

BY THOMAS HOFFMAN

As companies finalize their IT budgets for next year, some CIOs are finding themselves eyeing their calendars for an altogether different reason: to mark the increasing amount of time they're spending at their current jobs.

Consulting firm Meta Group Inc. said its research shows that CIOs currently are staying in their jobs for an average of 3.5 years. Although survey data measuring how job tenures have changed in recent years isn't readily available, seven CIOs and several technology analysts last week said anecdotal evidence indicates that longevity rates are on the upswing in corporate IT departments.

There are several factors contributing to the higher CIO retention rates, they noted. For starters, many corporate CEOs have tried to maintain stable management teams because of the weak economy, in part to reassure skittish investors. The economic problems have also reduced the amount of job-hopping by IT executives.

There's less churn among CIOs in corporate America now than there was during the dot-com boom, when all types of IT professionals moved from job to job, said Damien Bean, vice president of corporate systems at Hilton Hotels Corp. in Beverly Hills, Calif. "CIOs that have done an effective job of aligning technology with business requirements seem to be hanging around longer to see through on those efforts," Bean added.

Tech-Savvy CEOs

In addition, the CIOs said CEOs and chief financial officers have become more tech-savvy and increasingly recognize the importance of giving IT leaders enough time to follow through on the technology strategies they have implemented to support long-term

business objectives. Corporate executives "have realized the strategic nature of technology," said Heath Daughtrey, vice president of IT services at Harrah's Entertainment Inc. in Las Vegas.

"Part of it is that there aren't a lot of [job] opportunities in the market right now," said Mike Lecours, information systems manager at The Gund Co., a St. Louis-based maker of electrical products. "But management is also recognizing that stability is needed to help IT leaders execute on the businesses' strategies."

Tim Monteith, who has been CIO at Domino's Pizza LLC in Ann Arbor, Mich., for nearly three years, said the restaurant chain's CEO "has formed a team that has been trying to drive the company in many new directions, and that doesn't happen if you keep flipping leadership all the time."

Less Volatility

Furthermore, industry-specific factors may be contributing to lengthier CIO tenures. For example, among manufacturers, "a lot of ERP implementa-

tions weren't successful, and the CIOs got fired for that kind of thing," noted Paul Klein, CIO at Rich Products Corp., a Buffalo-based maker of frozen foods. But now that many companies have com-



"CIOs that have done an effective job of aligning technology with business requirements seem to be hanging around longer."

DAMIEN BEAN, Vice president of corporate systems, Hilton Hotels Corp.

pleted such projects, "there isn't as much volatility," he said.

For their own part, many CIOs have developed a better understanding of how to run a business, said Steve Scott, vice president of IT at Vision Service Plan, an eye care benefits provider in Rancho Cordova, Calif. Scott, who will have been in his position for three years in January, said he hopes to "drive that [figure] up."

Howard Rubin, executive vice president at Meta Group in Stamford, Conn., said he sees a different set of dynamics at play. CIOs who have met the cost-cutting pressures imposed by senior management over the past two years "have either been retained or promoted," he said. "Those that didn't got the boot." **41841**

SCO Threatens to Revoke SGI's Unix License Rights

Users say they don't see a reason to be concerned

BY ROBERT McMILLAN

Add Silicon Graphics Inc. to the list of technology companies that have been dragged into The SCO Group Inc.'s Unix copyright infringement dispute.

In an Aug. 13 letter addressed to SGI's legal department and released to the media last week, SCO CEO Darl McBride claimed that SGI's contributions to Linux put it in breach of its 1986 Unix licensing agreement, originally signed with AT&T Corp. but subsequently transferred to SCO.

According to McBride's letter, "SGI flagrantly permitted the copying and use of our proprietary information without any knowledge of the identities of the recipients" and "subjected our source code to unrestricted disclosure, unauthorized transfer and disposition, and unauthorized use and copying."

The letter threatens to ter-

minate SGI's Unix license as of Oct. 14 should SGI fail to "remedy all violations."

Terminating SGI's Unix license would affect SGI's Irix operating system, which uses SCO's System V Unix code, according to SCO spokesman Blake Stowell. "It would mean that they would have to either stop shipping it, or either destroy or return all copies of Irix to SCO," Stowell said.

Meritless Allegations

Mountain View, Calif.-based SGI responded to SCO's letter in early September with a letter claiming that SCO's allegations were without merit, said SGI spokeswoman Marty Coleman. "Our license is fully paid and nonterminable. They can't terminate it," she said. "We don't believe that their allegation of breach of contract has any merit."

SGI appears set to follow in the footsteps of IBM, which in June had

its license to distribute its AIX operating system revoked by SCO following similar allegations. IBM continues to distribute AIX, and the question of whether it breached its System V Unix agreement is now the subject of a \$3 billion lawsuit.

Prior to revoking IBM's Unix license, SCO sued the company for breach of contract. Stowell declined to say whether or not Lindon, Utah-based SCO was planning similar legal action against SGI.

Two users of SGI hardware in the scientific community said they have no concerns about the escalating legal fight between SGI and SCO.

Thomas Quinn, a professor of astronomy at the University of Washington in Seattle, said

"We try to stay out of these external activities. These things don't really come into our realm."

THOMAS ZACHARIA, ASSOCIATE LAB DIRECTOR, OAK RIDGE NATIONAL LABORATORY

the SCO case against IBM has been in his mind for months because he has other machines running Linux in his lab. But he said action by SCO against SGI won't affect the use of his two SGI Altix 3000 systems. "I'm assuming that SGI is just going to continue to support my machines," he said. "I

don't have too much reason to be concerned.

"At the moment, just from what I read [about the SCO lawsuit against IBM]... as far as I can tell, the SCO case is essentially baseless," Quinn said. "I'm going with the assumption that this case is really not going to come through, and even if it does, it's going to take such a long time, it's beyond my horizon."

Thomas Zacharia, an associate lab director at the U.S. Department of Energy's Oak Ridge National Laboratory in Oak Ridge, Tenn., agreed.

"These kinds of things always happen in industry," as companies have disagreements and battle issues out in the courts, Zacharia said. "We try to stay out of these external activities. These things don't really come into our realm." The lab uses an SGI Altix 3000 supercomputer with 256 Intel Corp. Itanium 2 processors. **41840**

McMillan writes for the IDG News Service. Todd R. Weiss contributed to this report.

FULL COVERAGE

To access all Computerworld stories relating to the SCO/Linux dispute, visit our Web site:

QuickLink a3260
www.computerworld.com

BRIEFS

Sun Predicts Big Loss, Revises Q4

Sun Microsystems Inc. said it will report a first-quarter loss that's larger than Wall Street analysts had forecast as a result of "intense" competition. The loss will trigger a \$1.05 billion tax charge, which Sun is applying to the results for the fourth quarter of its latest fiscal year, leaving it with a loss of \$1.04 billion for that period. Sun said the loss in its first quarter, which ended Sept. 28, could reach \$325 million.

Best Buy, EDS Sign Help Desk Contract

Electronics retailer Best Buy Co. said it has signed a five-year contract to outsource help desk and IT problem management operations for its stores and corporate offices to Electronic Data Systems Corp. in Plano, Texas. The value of the deal wasn't disclosed. EDS said it will initially provide help desk services to Minneapolis-based Best Buy from a facility in Winnipeg, Manitoba.

Verizon Offers to Buy Out Managers

New York-based Verizon Communications said it's offering a voluntary buyout deal to virtually all of its 74,000 management workers, including 9,300 people in IT. A Verizon spokeswoman predicted that several thousand employees will accept the offer, which was announced one week after the company lowered its financial results forecast.

Short Takes

IBM said it has signed a 10-year, \$2.56 billion outsourcing deal with NORDEA AB, a Stockholm-based bank. About 900 of Nordea's 2,900 IT workers will be shifted to an IBM-run joint venture. . . . AGILE SOFTWARE CORP. has bought TRADEC INC., a maker of manufacturing cost management tools. Both companies are based in San Jose.

MARK HALL ■ ON THE MARK

Keeping Users Off-line Is the Way to Secure . . .

. . . your network, jokes Stacey Lum of InfoExpress Inc. in Mountain View, Calif. While noting the impracticality of the idea, the CEO of the 10-year-old boutique security vendor does get his hackles up because companies seldom enforce the few security policies for which end users are responsible, such as having remote workers install patches and upgrades to their laptops. "Where's the enforcement?" he wonders. "Good workers don't get fired for not being in compliance with corporate security policies." He says "nagware," those pesky automated mes-

sages that urge users to update their software, doesn't work. That means it falls to IT departments to stop end users from contaminating their comrades with viruses and worms. One way to do that is to install technology that can evaluate the compliance of a remote device before permitting it on the network. Another way is to very publicly terminate the next fool who repeatedly lobs the inevitable Blaster equivalent into your environment. More fun, too. ■ Less work for you is possible in the struggle to secure your network while still keeping your job. Automated patch management can be the ticket. One vendor's offering is getting a face-lift today. Boston-based ManageSoft Corp. is releasing Security Patch Management Version 6.6 with improved reporting, policy-based "push" updating and continuous monitoring of the Microsoft security patch site, with selec-

tive download options. A best practice, suggests CEO Walter Elliott, is to use ManageSoft to establish a subset of machines to run the patch before it's deployed broadly. Also beginning today, the company's ManageSoft suite can deploy and update software on Linux systems. Expect to see versions for Sun's Solaris, IBM's AIX and HP-UX before New Year's Eve. ■ Let's say you're thinking about security compliance, and your business is in an industry with strict privacy regula-

tions, such as the medical and financial sectors. You may be responsible for securing e-mail between doctors and their patients, or financial advisers and their clients — even if the latter users don't have secure systems. According to Terry Olkin, chief technology officer at Secure Data in Motion Inc. (better known as Sigaba), a strict reading of the rules means that if a doctor

responds to a query from a patient via e-mail and the patient replies, that patient's message now has to meet HIPAA privacy standards. With the San Mateo, Calif., vendor's release tomorrow of Version 4.0 of its Sigaba Secure E-mail software, both parties can be encrypted through the product's Send Anywhere feature. The upgrade also includes federated authentication, so single sign-on is possible for users within trusted organizations. Prices start at around \$50,000. ■ Not all network problems are security-related. Sometimes your applications are acting flaky. But how do you really know? Perhaps if you used today's release of ClearSight Analyzer 3.0, you could see what was going on — literally. Like a complete video exchange of a video/voice-over-IP conversation. If the users experience jitter, so does the network analyst. No more need to delve into arcane packet analysis. Of course, the product lets you easily get to the packet details, but you probably won't need to, since the problems are much more obvious to behold. And it's not just VoIP. The behavior of applications such as Domain Name System operations, Oracle databases, Web servers and much more can be observed. San Mateo-based ClearSight Networks Inc.'s software sells for \$7,995. Bargain shoppers can get it for \$5,995 through December. If you wait a month, you can buy a version that monitors full-duplex 10/100 Ethernets and one that oversees Gigabit Ethernet. By the end of the quarter, there will be a version for monitoring remote sites. ■ Take note: Two key vendor barometers in the shift away from licensed software hit milestones in September. Application service provider Surebridge Inc. passed the \$100 million mark in booked business, and online-only CRM supplier Salesforce.com signed up its 100,000th user. Many smaller ASPs are also thriving. Maybe the dot didn't bomb after all. ☎ 41820

Conduct Business

Next week, Commerce One Inc. will ship Conductor 6.5, its process automation application for procurement management. The upgrade now has more than 70 standard business documents, such as invoices and purchase orders. It has also more than doubled to 200 the number of adapters for vertical market applications.

Marimba Upgrades Tool to Track App Use

BY MATT HAMBLIN

Marimba Inc. today will announce an upgraded application-tracking tool that can measure how often end users run the programs installed on their systems. Like similar products from rival vendors, the beefed-up tool is designed to help IT managers reduce corporate licensing costs.

The Software Usage Solution 6.0 release will extend the tool's capabilities for tracking application inventories to include the automated collection of

usage details, such as the last time an application was opened and how frequently it is used, said Kelly Wagman, a senior product marketing manager at Marimba in Mountain View, Calif. IT managers can use the data to decide whether to buy more software licenses, harvest unused applications for other end users or cancel unneeded licenses, she said.

Scotia Miller, regional manager of desktop architecture at Barclays Global Investors in San Francisco, said the invest-

ment management firm urged Marimba to develop the ability to track application use after using the vendor's software distribution tools.

Miller has been using a pre-release version of the product for about six months to track the use of 40 applications. She said Marimba's software detected about 1,100 unused licenses in a three-month period. About half of the end users who weren't using programs said they didn't need them.

"The cost of software is the

driver behind this initiative," Miller said. "With license monitoring on the increase by outside groups, our CIO also doesn't want to pay the fines for unauthorized use."

Barclays has configured the tool to detect applications that haven't been used for 35 days and to automatically send e-mail messages to end users asking if they want to give up their licenses. The 35-day limit was chosen to give workers on long vacations or business trips a reasonable amount of time in which to use applications, Miller said. ☎ 41825

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Iron Mountain Service Assesses E-mail Retention Policies, Systems

Targets financial firms facing need to meet SEC rules

BY LUCAS MEARIAN

IRON MOUNTAIN INC. last week announced a consulting service aimed at helping financial services firms comply with increasing pressure from regulatory agencies to store internal and external electronic correspondence.

Boston-based Iron Mountain said its Records Management Program Gap Analysis service can gauge a company's retention approaches and recommend changes, including the addition of e-mail archiving and search capabilities that can be outsourced or developed in-house.

David Young, director of business systems at the Common Fund for Nonprofit Organizations, a broker/dealer in Wilton, Conn., uses a message archiving and search service for Microsoft Exchange systems that Iron Mountain announced in January. Young said he signed up for the service because of regulatory pressures and an increased threat of litigation.

Following the Rules

The U.S. Securities and Exchange Commission requires financial services firms to store all e-mail traffic in its original form for at least three years and to make those communications "accessible" for the first two years. The National Association of Securities Dealers Inc. also has rules

that require brokerages to monitor and store communications with their clients.

Young said that trying to comply with the message retention rules on your own can become "an administrative nightmare" for IT managers. "You've got boxes [of paper documents] to deal with, optical storage to deal with, you need additional IT support for disaster recovery, and you need to make sure your servers are up and on the network," he said.

Brian Babineau, an analyst at Enterprise Storage Group Inc. in Milford, Mass., said a cottage industry has grown up around regulatory compliance within the financial services market. But he cautioned that

outsourcing isn't always the right answer, although it's often the smart one for small to midsize businesses.

Babineau said CIOs and corporate attorneys need to work together to fully understand the message-retention rules and then determine whether their companies face compliance risks. He added

that even large Wall Street brokerages with sufficient IT resources have to be careful to ensure that acquired companies are compliant.

"It's not the e-mails created two months ago you have to worry about as much as the

e-mail created two years ago when you brought [the new company] on board," he said.

Iron Mountain's e-mail archiving service uses EMC Corp.'s Centera disk arrays

and mailbox management, regulatory compliance and content searching software from Arlington, Texas-

based KVS Inc. But

Iron Mountain officials said IT managers can use the gap analysis offering separately to help prepare for the development or upgrade of in-house archives.

Charles Bennett, director of compliance at Hornor, Townsend and Kent Inc., the

FINANCIAL FOCUS

For more coverage of IT issues affecting the financial services industry, go to:

QuickLink a3670
www.computerworld.com

EMC Releases NAS Devices Tied to Its Midrange Arrays

Gateway products support integration of network-attached storage, SANs

BY LUCAS MEARIAN

EMC Corp. announced last week a pair of network-attached storage (NAS) devices that connect to its midrange Clariion disk arrays for integration with systems on storage-area networks (SAN).

The Hopkinton, Mass.-based company also introduced an entry-level version of its Celerra NS600 NAS file server with a built-in Clariion array. In addition, EMC said all of its NAS products now can support a mix of low-cost ATA and high-end Fibre Channel disk drives. The rollout continues EMC's strategy of targeting the midrange market with hardware that supports high-end functionality, such as support for making point-in-time copies of data.

EMC said the new NS600S

file server includes a single data engine and starts at \$114,000 for a model with 1TB of storage capacity. In comparison, it charges \$167,000 for a 1TB version of the original NS600 system, which includes two engines. Meanwhile, the NS600GS and NS600G NAS-to-SAN gateway devices both have starting prices of less than \$100,000 (see box).

Dave Johnson, director of IT at Chicago-based accounting and auditing firm Grant Thornton Inc., said EMC appears to be trying to fill out its midrange product line.

But Johnson added that he isn't interested in using his five Clariion arrays, which are installed at four regional offices and Grant Thornton's corporate data center, to support file server functions. He

said it's far cheaper to use a clustered pair of Hewlett-Packard Co. ProLiant DL580 servers at each of the firm's 51 branch offices nationwide to handle network authentication functions as well as file and print services.

Steve Kenniston, an analyst at Enterprise Storage Group Inc. in Milford, Mass., said EMC's new gateway devices

EMC's New NAS Devices

■ **NS600GS:** Single-engine gateway device that uses external Clariion disk arrays to store data. Starts at \$63,000.

■ **NS600G:** Dual-engine version of the gateway product. Starts at \$97,000.

■ **NS600S:** Entry-level file server with one data mover and a built-in array. Starts at \$114,000 in a 1TB configuration.

are an attempt to gain a foothold against more established NAS vendors, such as HP and Network Appliance Inc. EMC is "rounding out the whole message in the midtier range," Kenniston said.

EMC said the new support for ATA disk drives will let Celerra users rely on the lower-cost devices for data backup purposes while still using Fibre Channel disks for primary data storage.

In addition, EMC released a low-end NAS device that matches its Clariion CX200 disk array with Microsoft Corp.'s Windows Powered NAS software. The NetWin 200 product, which was announced in May [QuickLink 38213], can scale from 500GB to 4.4TB in storage capacity and starts at \$32,000.

The NetWin 200 is the first EMC product that uses Microsoft's NAS software, and it's designed to help IT managers consolidate data backups of low-end Windows servers. "Customers, especially Dell clients who've been waiting to do data management better, have been looking forward to this," Kenniston said. **41821**

FEATURES

Iron Mountain's Message Retention Analysis Service

SUPPORTS development of consistent retention and document-destruction policies.

CREATES a universal index system to allow keyword searches of e-mail subject lines and content.

PROVIDES regulatory compliance education and training for end users within subscribing companies.

broker/dealer division of Penn Mutual Life Insurance Co. in Horsham, Pa., said the company's 16,000 sales representatives can generate as many as 12,000 e-mail messages a day. Bennett added that he plans to begin using Iron Mountain's Web-based archiving service this month. **41816**

Correction

In our Sept. 29 Field Report titled "Growing Into a Data Center," the name of the CEO of Occupational Health + Rehabilitation Inc. was misspelled. His name is John Garbarino.



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BRIEFS

IBM Acquires App Porting Business

IBM said it has acquired an application porting services business focused on its Linux and Unix servers from Austin-based Sector7 USA Inc. for an undisclosed price. The deal included most of Sector7's assets and the intellectual property for its tools, which support the migration of applications to IBM's servers. IBM also said it will hire Sector7 employees to work in its IT services unit.

Microsoft Agrees To Settle Lawsuit

Microsoft Corp. said it has agreed to pay a total of about \$10.5 million to settle a class-action anti-trust lawsuit involving users that bought Windows directly from the company. The settlement deal needs to be approved by a U.S. District Court judge in Baltimore before it becomes effective. The plaintiffs had sought to include a much larger group of users in the suit, but court rulings narrowed the scope of the case.

Nortel, Solecron Alter Product Deal

Nortel Networks Ltd. and Solecron Corp. said they have revised a 3-year-old contract under which Milpitas, Calif.-based Solecron manufactures products for Brampton, Ontario-based Nortel. The deal, which was due to expire next year, was extended to 2009. But the companies sharply reduced its projected value to \$7.5 billion. The initial contract was for \$10.4 billion.

Short Takes

CASSATT CORP., a Menlo Park, Calif.-based start-up headed by former BEA Systems Inc. CEO Bill Coleman, plans to offer a set of autonomic computing tools. . . . **THE OPENSLL PROJECT** said it has patched three security holes in its open-source version of the Secure Sockets Layer protocol.

Laws, Concern for Corporate Image Make Privacy a Priority

Failure to keep data private could put companies in jeopardy on several fronts

BY JAIKUMAR VIJAYAN
COLUMBUS, OHIO

REGULATORY requirements and the need to protect corporate reputations are making it crucial for companies to implement comprehensive data privacy programs, said users at the PrivacyCon 2003 conference here last week.

A failure to do so will eventually expose them to legal risks, hinder their ability to do business in certain parts of the world and jeopardize trusted relationships with customers, they added.

"Privacy laws are having a huge impact" on companies, said Jay Cline, privacy manager at Carlson Companies Inc., a Minneapolis-based group of businesses in the travel, hospitality and marketing industries.

Carlson, which until late 2000 had no formal privacy program, is rolling out a global effort aimed at getting its business units to comply with a patchwork of state, federal and international requirements, Cline said.

A Corporate Value

Companies will need to "advance privacy as a corporate value," said Kevin Lyles, a Columbus-based attorney at international law firm Jones Day LLC. "If you don't have a privacy program, you have legal exposure. Fines and penalties are going to be much higher" for noncompliance, he said. A company's perceived stance toward privacy will also have an impact on shareholder value, he added.

A recent controversy involving JetBlue Airways Corp.'s release of passenger information to a private contractor is an example of the kind of reputation damage

companies risk from privacy-related failures, said Peter Cullen, chief privacy strategist at Microsoft Corp.

The incident involved JetBlue providing passenger information to a Department of Defense contractor, which used the data for a project related to military-base security.

"JetBlue is a company that probably wishes it had done things differently," Cullen said during a keynote address.

A JetBlue spokesman offered no comment, saying that it was still too soon after the incident to be able to say what lessons have been learned from the episode.

Establishing a privacy program is more complex than just meeting regulatory requirements, said Keith Herath, chief privacy officer at Nationwide Mutual Insurance Co. in Columbus. "Legal requirements are only the minimum. Most laws are a compromise to the lowest common denominator," Herath said.

Privacy Guidelines

Key concepts behind building a global privacy program include the following:

- Focus on **business drivers** rather than regulatory drivers.
- Establish **good faith efforts** and **documentation** for demonstrating compliance.
- Integrate the **privacy program** into existing organizational and reporting structure.

SOURCE: KEVIN LYLES, JONES DAY LLC

Sometimes companies have to accommodate higher standards to ensure that a consistent policy is applied to all customers, users said.

For instance, prior to the Gramm-Leach-Bliley Act, Nationwide had to comply with a law in 15 states that required it to provide to customers certain rights of access to personal data — and the means to correct any inaccurate data. Though the act doesn't require Nationwide to take the same measures in the other 35 states, the insurer has begun doing so anyway, Herath said.

"We felt that it made no sense to offer it in 15 states and nowhere else," he said.

But implementing a consistent global privacy program can be a huge challenge, said Scott Shipman, chief privacy officer at eBay Inc.

As a company with operations in several countries, San Jose-based eBay is forced to deal with various cross-border data transfer and retention requirements, consumer consent models, reporting requirements and enforcement issues.

New state-level privacy regulations such as those being proposed in California [Quick-Link 41325] add to the problem, Shipman said.

But multinational companies are going to have few options but to comply, Lyles said.

"The data protection directives in Europe are forcing companies to take privacy seriously," Lyles said. The real concern today for a lot of companies is that enforcement of European laws could well force them to stop the flow of data to and from that region, he added. **41835**

Microsoft Exec Says Privacy a Top Concern at Company

COLUMBUS, OHIO

Microsoft Corp. is determined to incorporate better privacy safeguards into its products and practices, according to its chief privacy strategist, Peter Cullen.

Addressing a group of privacy professionals at the PrivacyCon 2003 conference here last week, Cullen said Microsoft is focused on giving users more choice and control over the manner in which information is collected and used.

To that end, Microsoft has implemented a privacy program to create a high level of awareness relating to privacy issues in the

product design stage. The Microsoft Windows group alone has 125 employees with privacy-related responsibilities and five privacy managers focused on ensuring that each of the components that goes into the Windows operating system has been "thought through from a privacy perspective," he said. This includes looking at how each component collects, stores and uses data, he said.

The company is also focused on giving users more choices and control over their information, he said. As an example, he cited the user consent that's re-

quired to send error reports to Microsoft via the Internet when an application crashes.

Microsoft is also working on a new security technology called the Next-Generation Secure Computing Base that will allow users to secure confidential data within a "virtual vault" in a PC. The technology will allow users to store confidential information in a separate location on a PC and control application access to that data. It will also allow users to control who can see that data during data transmission.

— Jaikumar Vijayan

Continued from page 1

WLAN Threat

was unaware of the Aug. 7 warning until he was contacted by *Computerworld*.

Sharp has a network of 8,000 computers spread across seven hospitals, six urgent-care centers and three affiliated medical groups. It uses both wired and wireless Cisco equipment, including about 200 WLAN access points. Wiesenberg said Sharp has always viewed LEAP as a transitional protocol for use until the 802.11i wireless security standard is finalized. Now he plans to explore alternatives to LEAP.

Mike Martell, systems manager at The Dingley Press, a Lisbon, Maine-based catalog printer that uses a Cisco WLAN in its warehouse, also said he didn't know about the potential problem with LEAP until last week. But Martell, whose company is featured in a customer profile on Cisco's Web site, said he wasn't surprised to hear that the security technology could be overcome by a dictionary attack.

Massive Assaults

Such attacks assault password protection schemes by feeding huge amounts of words and numbers into a targeted system. Thanks to increases in processing power, some dictionary attacks can crack passwords in a matter of minutes, Martell said. He said users should use long passwords with odd combinations of letters and numbers.

Cisco made similar recommendations in the Aug. 7 warning, saying that IT managers can reduce the impact of dictionary attacks by mandating the use of "strong passwords" and ones that become invalid after a specified time period.

Ron Seide, product line manager at Cisco's wireless business unit, last week said his company believes LEAP is "relatively" secure if users follow good password management approaches. He added that Cisco also offers an upgrade path to help customers migrate from LEAP to its

stronger Protected Extensible Authentication Protocol, which uses one-time passwords and digital certificates.

Seide said the second notice about the dictionary attack threat will have "more visibility" than the initial one did. Cisco will act "with all due haste" to notify users when it learns of specific plans to release the attack tool, he said. He added that the company will use multiple methods of

communicating that to users, but he didn't provide details.

Cisco e-mails security alerts to its sales force as well as to its distributors and resellers, according to Seide. But he said that unlike Microsoft Corp., which lets its users sign up to get e-mail messages containing security-related information, Cisco has no easy way to capture the e-mail addresses of customers.

The threat facing LEAP-

based systems was put under a spotlight last week after Joshua Wright, a systems engineer at Johnson & Wales University in Providence, R.I., demonstrated a dictionary attack against the Cisco technology at a conference in New York sponsored by Light Reading Inc. Wright couldn't be reached for comment. But according to sources who were in the audience, Wright said he planned to make the

tool he used publicly available within a couple of months.

The University of British Columbia in Vancouver runs a WLAN with about 1,200 Cisco access points. Jonn Martell, who manages the WLAN, said the school decided to use virtual private network technology instead of LEAP because of concerns about dictionary attacks. Password-based systems are "fundamentally not the answer," he said. **41843**

Continued from page 1

Pentagon

cations thus far by an order of magnitude, said Bruce Triner, director of defense special programs at the Pleasanton, Calif.-based vendor. It's also expected to be the first rollout by any user of the PeopleSoft 8.8 global payroll module, according to Carpenter.

But progress has been slow, even though the DOD's plan from the start was to configure the system so it would be in line with private-sector HR procedures and require a minimal amount of software customization. "We'd rather not reinvent the wheel and rewrite code," Carpenter said. "We're looking for PeopleSoft to be installed as much out of the box as possible."

PeopleSoft's applications were picked over rival products because IT officials at the Pentagon felt they would most closely support its needs, she added. But after the selection was made, the DOD did what it described as an "extensive fit-gap analysis" to further investigate how well the software met its requirements.

The DOD had planned to

have part of the system in place by last fall, but Carpenter said the process of reviewing the prime contractor bids submitted by Northrop Grumman and other systems integrators took longer than expected because of the detailed nature of their proposals.

"I don't think anybody could have predicted the length of the [prime contractor] acquisition period," said Jon Jensen, a Northrop Grumman executive who led the Los Angeles-based company's effort to win the contract. "It was probably a disappointment for a lot of folks in terms of time frame." Jensen works at Northrop Grumman Information Technology, the Herndon, Va.-based operation that will manage the DIMHRS project.

Breaking It Down

Carpenter said that because of the project's uniqueness and complexity, military officials made the decision to separate development into two phases, the first of which involved the five systems integrators that were competing for the prime contractor's job. In September 2002, the Pentagon gave the companies small contracts to develop docu-

mentation and recommended system specifications.

The companies in December submitted implementation plans that weighed a combined total of 4,800 pounds, Carpenter said. Last week's choice of Northrop Grumman to manage the rollout signals the actual start of work on the system, which marks the beginning of Phase 2.

But Northrop Grumman still needs to finalize the technical design and a detailed rollout schedule, both of which are due within the next six months. The DOD hopes to get the U.S. Army online with DIMHRS by November 2005 and then add the other military branches over the following 24 months.

"It's not rocket science, but it's not as easy as it looks at first blush," Carpenter said.

Ray Bjorklund, an analyst at consulting firm Federal Sources Inc. in McLean, Va., predicted that the project's total cost could reach \$500 million if administrative expenses and ongoing maintenance fees on some of the DOD's legacy systems are included. Pentagon officials declined to comment about his estimate.

Work on the project will be centered at a DOD IT facility in New Orleans. The Pentagon plans to run the PeopleSoft applications on IBM Unix servers and link them to a single logical database that will be built on IBM's DB2 software and contain consolidated information about all military personnel. The DOD will also install backup systems for disaster recovery purposes, Carpenter said. **41815**

Impact of Oracle Bid Downplayed

Defense officials involved in the DIMHRS project said they don't see Oracle Corp.'s hostile attempt to acquire PeopleSoft as a big obstacle to the Pentagon's rollout of its new human resources system.

U.S. Navy Capt. Valerie Carpenter, the joint program manager responsible for development of the HR system, said the takeover bid that Oracle announced in June hasn't been a cause of worry for her. "The DOD has a valid contract with PeopleSoft, and if they were bought out by Oracle, we would expect Oracle to honor that contract," she said.

"At this point, it's not considered a viable threat," said Jon Jensen, who led Northrop Grumman's successful effort to be named the prime contractor for the project.

Jensen noted that the buyout offer initially caused worries throughout the IT industry because of concerns that Oracle would stop actively selling PeopleSoft's applications. The takeover attempt is currently on hold while federal officials examine its possible antitrust implications.

Jensen speculated that if Oracle succeeds in its quest to buy PeopleSoft, the Pentagon's project could be delayed or even reconsidered. But, he added, "unless something dramatic happens, we're on stable ground."

- Marc L. Songini

The Pentagon's Progress

Key developments in the DOD's DIMHRS Project:

| AUGUST 2001 | APRIL 2002 | SEPTEMBER 2002 | SEPTEMBER 2003 |
|---|--|---|--|
| The Defense Department buys an enterprisewide license for PeopleSoft HR applications for \$48M. | RFPs for the software implementation are issued to consulting and systems integration firms. | The DOD gives five companies up to \$1M contracts to submit updated implementation proposals. | Northrop Grumman is awarded a \$281M contract to manage development of the system. |



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DHS Initiates Real-Time Cybersituation Project

Feds look for immediate security incident data

BY DAN VERTON

The U.S. Department of Homeland Security's cybersecurity division is spearheading an aggressive new project to create a real-time cybersituation-awareness system, a senior DHS official said last week.

The aim of the system is to provide a nationwide capability to conduct instant analysis of security incident data for signs of coordinated attacks or major virus and worm outbreaks.

Sallie McDonald, the senior executive responsible for outreach and awareness efforts at the agency, said the National Cyber Security Division (NCSA) of the DHS is working with SRI International, Symantec Corp. and Computer Associates International Inc. to develop a nonproprietary data collection system that will run on an automated security extranet and feed incident reports to the various Information Sharing and Analysis Centers (ISAC) operating in the private sector. The ISACs would then feed the data to the national situation-awareness system.

"We will be deploying this in the federal sector, starting at the U.S. CERT first so we can see in real time what is happening across the nation," said McDonald. The DHS announced on Sept. 15 the formation of a computer emergency response team, U.S.-CERT, which is the result of a combined effort of the Federal Computer Incident Response Center and the CERT Coordination Center at Carnegie Mellon University.

The new incident reporting and analysis system will be launched in December at the first DHS-sponsored Cyber Security Summit to be held in Silicon Valley at an undetermined location, said McDonald.

In addition to the reporting system, the DHS plans to announce a security awareness effort targeted at 50 million home users and small businesses, and will draft a national cybersecurity road map that includes specific milestones and metrics for measuring progress in bolstering security.

According to testimony provided to Congress last month by Robert Liscouski, assistant secretary of homeland security for infrastructure protection

at the DHS, the new situation-awareness capability will leverage the data that's now collected by more than 200 private, public and university CERTs within the U.S. and feed that data to the newly created U.S.-CERT. The goal within the next year is to reduce response times to any attack to an average of 30 minutes, according to Liscouski.

All of these efforts will be launched as Amit Yoran, former vice president for managed security services at Cupertino, Calif.-based Symantec, joins the DHS as head of the NCSA [QuickLink 41394]. McDonald and others praised the appointment of Yoran, who also served as the former director of vulnerability assessment for the Pentagon's CERT.

However, some prominent experts said quietly that, despite Yoran's experience, he faces an uphill battle when it

comes to reinvigorating the public/private partnership, which they added has lost much of its momentum as a result of organizational and staff changes.

According to one DHS official, who requested anonymity, Yoran will probably have access to top department leaders, but he may not easily adapt to the government's rigidity and slow pace. Yoran couldn't be reached for comment.

Scott Blake, vice president of information security at BindView Corp. in Houston, said the questions about leadership and reporting structure have overshadowed the real issue of the failure of the government's policy toward the private sector.

"I'm increasingly convinced that the carrot method of encouraging the private sector to practice

good security isn't working and isn't going to work," said Blake. "While putting a face to the effort [behind the national strategy] may help a little, I don't see the IT world adopting better security without a stick being applied. Many companies are waiting for case law to demonstrate what they really have to do." **41837**



AMIT YORAN
is the new head
of the NCSA.

ID Theft Undermines Integrated Terror Watch Lists

Despite the government's recent efforts to integrate dozens of watch list databases, terrorists may still be slipping through numerous cracks in the nation's homeland defenses by stealing identities and using computers to create fraudulent travel documents, officials told Congress.

Testifying before the House Select Committee on Homeland Security last week, Ronald D. Malfi, director of the General Accounting Office's Office of Special Investigations, said that over the past three years, investigators have succeeded in using fraudulent identities and documents created on home computers to do things like enter the U.S., buy firearms and gain unfettered access to government buildings.

"We created fictitious identities and counterfeit identification documents, such as driver's licenses, birth certificates and Social Security cards... using inexpensive computer software and hardware that are readily available to any purchaser," said Malfi.

"It's relatively easy for a terrorist to pose as someone else," said Rep. Robert Andrews (D-N.J.). "And the impact is that

the integrated terrorist watch list and other databases that the [DHS] is sharing with other agencies is ineffective if we're not identifying [people]."

Delegate Eleanor Holmes Norton (D-D.C.), a self-proclaimed "card-carrying civil libertarian," said the nature of the vulnerabilities has led her and others to rethink the issue of a national ID card.

However, Keith Kiser, chairman of the American Association of Motor Vehicle Administrators, said a national ID card is unnecessary and would probably require IT systems that are currently not in place. Instead, Kiser argued that the existing IT infrastructure serving state motor vehicle departments, which is used to verify identities and issue valid driver's licenses, should be enhanced and standardized.

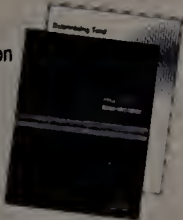
Kiser urged Congress to support a massive IT upgrade for motor vehicle departments that would include providing a uniform system to verify in real time an applicant's driving history and the authenticity of documents used to establish his identity, such as Social Security cards and taxpayer ID numbers.

- Dan Verton

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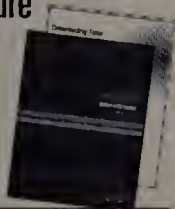
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by Russell Senesac
InfraStruXure Product Manager

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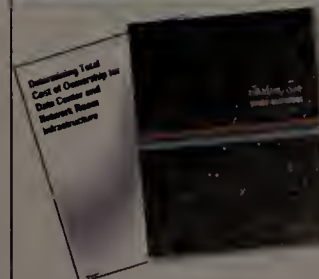
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Fired @stake CTO Says Microsoft Critique Was 'Business as Usual'

Geer defends decision to involve CCIA in security report's release

BY DAN VERTON

Dan Geer was fired from his job as chief technology officer at @stake Inc. on Sept. 25, one day after he and six other security researchers released a report that criticized Microsoft Corp.'s dominance of the software industry as a fundamental cause of IT security problems [QuickLink 41691].

The report was published by the Computer & Communications Industry Association (CCIA), a Washington-based trade group that includes some of Microsoft's top rivals. @stake, a Cambridge, Mass.-vendor of security software and consulting services, gets a significant portion of its revenue from Microsoft. Geer last week spoke to Computerworld about his firing and the controversy surrounding the report.

What happened on Sept. 25? I'm still cautioned by my attorney not to be too precise about anything. But I learned I was fired from a press release. When I did eventually speak to

the CEO [James Mobley of @stake], it was cold and short, and he had nothing to say but, "Your services are no longer required." And there was and has been nothing else beyond that.

@stake has said that you should have known Microsoft was a client and that, although other @stake officials didn't necessarily disagree with everything in the report, your participation showed lack of respect for a major customer. Is that unreasonable?

If you knew my history, you would know that I'm a commentator on lots of things a lot of the time. It's not as if there's a procedure to check everything with marketing. The reason I was recruited into [@stake] in the first place was precisely for my ability to look over the horizon, to see the big picture and to umpire the game, if you will.

I once had someone explain to me that the way you could tell the difference between a young umpire, an experienced umpire and an old umpire was that the young umpire would say, "I call them as I see them." And the middle-aged umpire would say, "It's

not a ball or a strike until I say it's a ball or a strike." And the old hand would say, "I make it a ball, or I make it a strike."

If you don't mind me being a little immodest, I like to think that I'm approaching the latter. I comment on everything that I'm capable of commenting on as frankly as I am able to do so. It's what I am. So from my point of view, this report was business as usual and unremarkable. The only thing that made it remarkable was the reaction of the CEO.



Q&A

FURNAL/GRAY

Why did you choose to align the study with a clearly partisan group like the CCIA when you could have approached any number of organizations that have a reputation for being evenhanded? I had a satellite to put into orbit, and they had a launch vehicle. I went to an organization that I was relatively certain would ensure

that the report couldn't be ignored. I think that was an unqualified success, and [it] was made more of an unqualified success by adding the publicity engine of dissing me in the process. It was almost a gift.

A lot of people say they agree with the report's main premise that monolithic IT infrastructures inherently are less secure than multivendor ones. But some also say that multivendor environments may pose just as many security problems because of

CEO Responds on Firing

In response to Geer's comments about his firing, James Mobley, @stake's president and CEO, said in a statement that he placed "a number of unreturned phone calls" to Geer before the company announced his dismissal.

"He finally returned my call after the release of the report [on Microsoft], at which time I informed him that his services were no longer required," Mobley said. "This conversation occurred prior to my authorization of the release of @stake's public statement."

Mobley added that he has "the greatest respect for Dr. Geer as a research scientist and security expert."

- Dan Verton

poor system configurations. There is that point, frankly. But if I had to choose between which [approach] we could have in the future, there is no question in my mind. As far as configuration difficulty, the reason one has [that] is because most large systems have too many knobs to adjust. When you have too many knobs to adjust, you don't adjust them.

What are your plans now? I'm being inundated by people who want to do my planning for me. But there seems to be no shortage of things one can do with the rest of one's life. **Q 41790**

Middleware.
It's on the trading floor.

Hyperion Sets Plan to Meld Its Software With Brio's Data Tools

BY MARC L. SONGINI

Hyperion Solutions Corp., which expects to complete a buyout of struggling Brio Software Inc. on Oct. 16, last week said it plans to begin delivering integration hooks between its line of data analysis products and Brio's query and reporting tools by year's end.

John Kopcke, Hyperion's chief technology officer, said the Sunnyvale, Calif.-based company will release a complete integration road map later this year. But he noted that Hyperion's plans include a common services architecture that will give users a single sign-on feature and other shared capabilities for the two product lines.

And by next spring, Hyperion ex-

pects to be ready to demonstrate technology that will support all querying, reporting and analysis functions from a single user interface, Kopcke said.

Hyperion is also working to tie together specific products. For example, links between its budgeting and business performance management applications and Brio's tools are due this quarter, Kopcke said. That will let users craft reports that combine operational data from ERP and other transaction systems with finance information from Hyperion's software.

Hyperion in July agreed to buy Santa Clara, Calif.-based Brio in a cash and stock deal that was valued at \$142 million [QuickLink 40138].

For Brio, the deal has "brought a zombie back from the near-dead," said Mike Schiff, an analyst at Current Analysis Inc. in Sterling, Va. "Brio is being taken seriously again." For example, Brio and IBM last week announced two product bundles that will include Brio's tools and IBM's DB2 Data Warehouse software, Schiff said. **Q 41795**

Cisco, Huawei Look to Settle Software-Copying Lawsuit

Cisco's claims put on hold pending review of product changes

BY MATT HAMBLÉN

Cisco Systems Inc. and Huawei Technologies Co. last week announced an agreement that moves them toward a settlement of a lawsuit Cisco filed in January charging Huawei with pirating its internetworking software and infringing on at least five patents.

The two companies said in a brief statement that they had agreed to stay, or put on hold, Cisco's suit, which was filed in U.S. District Court in Marshall, Texas. The stay will remain in effect pending an outside expert's review of changes that Shenzhen, China-based

Huawei has made to its Quidway router and switch products in response to Cisco's claims, according to officials from the networking rivals.

Cisco and Huawei added in their joint statement that they expect the deal "will lead to the end of the lawsuit." However, it could take up to six months to complete the independent review process, said Ron Friedman, associate general counsel at 3Com Corp., which intervened in the suit on behalf of Huawei in June.

Settling the lawsuit would eliminate a potential cloud hanging over the networking equipment joint venture that 3Com and Huawei are setting up in Hong Kong. Friedman said Marlboro, Mass.-based 3Com welcomes the agreement between Cisco and Huawei,

and he predicted that the deal won't have any negative affect on the formation of the joint venture.

The joint venture is due to begin operations next month provided the Chinese government signs off on the plan. It will develop enterprise networking products and sell them in China and Japan, with 3Com handling sales in the U.S. and elsewhere.

Separate from the joint venture, 3Com has already begun shipping two Huawei products packaged with its own user interfaces and technical support services. 3Com last week announced a Huawei-built WAN router line [QuickLink 41657], and in July it released a core LAN switch made by the Chinese company.

Ted Malos, director of technology at the Ventura Unified School District in Ventura, Calif., uses both Cisco and 3Com products and plans to evaluate the new WAN routers that 3Com is selling. Malos said Cisco's lawsuit against Huawei "seemed kind of odd" and added that it had not affected his technology purchasing plans.

The suit alleges that Huawei copied portions of Cisco's IOS source code for use in the Quidway product line, which isn't being sold by 3Com, said Zeus Kerravala, an analyst at The Yankee Group in Boston. Kerravala added that Bruce Claflin, 3Com's president and CEO, told analysts earlier this year that

the company would avoid reselling any of Huawei's products if they possibly infringed on Cisco's patents.

In filing the lawsuit against Huawei, Cisco officials "were rightly concerned about their intellectual property and patents," said Nick Lippis, an analyst at Lippis Consulting in Hingham, Mass. But, Lippis noted, Cisco also was worried that Huawei's alleged copying of its software code and technical documenta-

tation could result in a "flooding of the market with very cheap products."

Cisco sought monetary damages as part of its January complaint, but all the parties to the case last week declined to comment on whether Huawei would have to make any payments if the suit is settled. **41799**

Cisco's suit charges that Huawei:

COPIED PORTIONS of Cisco's IOS software, including source code and its command line interface.

ILLEGALLY USED technical documentation that was copyrighted by Cisco in its own product manuals.

INFRINGED ON at least five Cisco patents related to proprietary routing protocols.

Palm's Tungsten Device Adds Bluetooth, Widescreen Support

BY BOB BREWIN

Palm Inc. last week introduced three handheld devices, including a high-end model with Bluetooth short-range wireless capabilities and a 320-by-480-dpi color screen that can be used in either vertical or horizontal mode.

Milpitas, Calif.-based Palm said the Tungsten T3 handheld is based on Intel Corp.'s 32-bit XScale processor and includes improved personal information manager tools and IBM's Java-based WebSphere Micro Environment software. The 5.5-oz. device costs \$399 and is designed for corporate users, said Anthony Armenta, a senior product manager at Palm's hardware unit.

Jeff White, a longtime Palm user

who is a biomedical engineer at Miami Children's Hospital in Coral Gables, Fla., said the T3 packs a lot of functionality into a small, lightweight computer that can be carried in the scrubs worn by doctors and nurses.

ON THE MOVE

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QuickLink k1000
www.computerworld.com

The T3's ability to switch from the standard portrait-shaped screen used by most handheld devices to a landscape mode makes it easier to read documents, White said. "People naturally want to scroll up and down, and

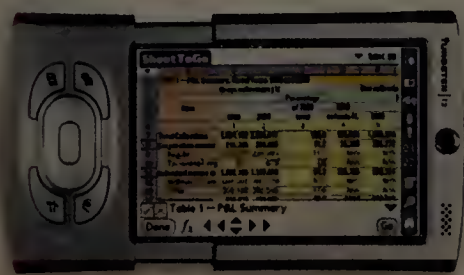
they hate to scroll sideways," he said.

White also praised the battery life of the T3, saying that the battery-level indicator on a device he received via an early shipment still read 100% after being used for four days. Previous Palm models have run out of power in a matter of hours, according to White.

The T3 has better screen resolution than any rival devices based on Microsoft Corp.'s Pocket PC operating system, said Sam Bhavnani, an analyst at ARS Inc. in La Jolla, Calif. He noted that the horizontal landscape viewing mode will make it easier to read not only text documents but also Excel spreadsheets, because end users will be able to see a larger number of spreadsheet cells than they can in portrait mode. **41800**

Palm Tungsten T3 Handheld

A horizontal screen is designed to make it easier to read documents.



Middleware.
It's in the end zone.

MARYFRAN JOHNSON

Credibility at Stake

ANOTHER REPORT on Microsoft made front-page news last week, once again raising credibility questions and controversy. This time, the story ["Anti-Microsoft Security Report Mired in Politics," QuickLink

41727] started out being about one thing — a research report claiming that there are global security threats inherent in Microsoft's monopoly position in IT infrastructures — but ended up being about quite another.

One of the report's seven authors (all of them respected security experts) was fired for taking part in this very public criticism of Microsoft. Dan Geer, now the former CTO of security consultancy @stake, became the focus of this suddenly more interesting and politicized story. Microsoft is one of @stake's major clients, you see, and Geer is way too smart not to have known what was, ahem, at stake when he signed his name to "CyberInsecurity: The Cost of Monopoly."

Publicly ticking off a major client while embarrassing your CEO is nobody's recipe for job longevity.

Yet in an interview with our reporter (see page 18), Geer seemed to revel in the outcome. When asked why the group had chosen to launch the report from the anti-Microsoft Computer & Communications Industry Association, Geer called the move "an unqualified success." He said it became even more of a success "by adding the publicity engine of dissing me in the process. It was almost a gift." A gift for whom? I wonder. Not for the credibility of that report, which is a shame, because it makes many valid points about the security costs of Microsoft's dominance. But many of our readers told us that industry politics and the CCIA's bias undermined the impact of the 24-page re-



MARYFRAN JOHNSON is editor in chief of Computerworld. You can contact her at maryfran.johnson@computerworld.com.

port. Geer's firing played out more like a publicity stunt than a punishment for engaging in free speech — although it clearly had some elements of that.

The bigger disappointment here was how little this expert treatise had to offer by way of recommendations for IT managers struggling to secure their enterprises.

It laid a lump of blame on the federal government's doorstep (as if Uncle Sam will even blink), and another with the user companies that buy Microsoft's security-challenged products because they have little or no choice. But the only solutions were directed at the government, which has a lamentable record of getting Microsoft to do anything. For example, the feds were urged to "vigorously" force Microsoft to publish interface specifications for Windows and Office and to make nice

with vendor consortia on development. Pretty tepid advice over which to risk your credibility.

* * *

On another credibility issue, I wrote about Forrester Research's tainted Microsoft vs. Linux report in this space two weeks ago [QuickLink 41489]. A number of you applauded our new policy of requiring disclosure on the funding behind IT research reports. A few wondered why we weren't doing so all along.

I also heard from Forrester CEO George Colony, who agreed that the Microsoft sponsorship of the Linux report had compromised his firm's credibility. He responded by posting a new "integrity and objectivity" policy on www.forrester.com, in which he vows to no longer "accept projects that involve paid-for, publicized product comparisons."

Forrester will still conduct sponsored vendor research, Colony explained, but no one will have bragging rights about the results. "Every company has conflicts of interest that have to be managed," he said of the potential for vendor clients to influence the analysts advising user clients. "It's how you manage the conflict that matters."

Indeed. Your credibility can be, um, at stake. **41805**

PIMM FOX

Cleaning Up The Kingdom Of Content

CONTENT may be king, but if so, the kingdom is a royal mess. Companies are bogged down trying to meld information from disparate departments, then pushing it through a cumbersome approval process only to be stymied by a publishing routine that's time-consuming and error-prone. And with greater emphasis being placed on the integration of business units and collaboration with internal and external partners, the demand for simple, straightforward content management systems (CMS) is acute.

Luckily, there are ways to clean up the mess. By offloading the software components to application service providers, content management can be done via a Web-based service with common templates, step-by-step formats, access controls and shared design elements.

It's important to note that a CMS isn't the same as a document or file management system, nor is the ASP model appropriate when you're looking for enterprise portals connected to robust back-end applications.

But there are distinct advantages. Consider the experience of Josh Hoover, marketing systems manager at Waterloo, Wis.-based Trek Bicycle Corp. He has developed Web sites for several Trek brands, working with numerous advertising agencies in the process. But there wasn't a unified approach to content, nor was there a coherent schedule controlled by Trek's marketing team. Worse, it was expensive to make changes to all of those Web sites.

"No one knew where anything was in the process," says Hoover, who also had to work out how to handle the translation services needed in Trek's growing European business. "We would give the content to the agency, who would pass it to translators, who would pass it back to the agency, who would then pass it



PIMM FOX is a freelance writer in San Francisco. Calif. Content management systems.



back to us in this long, burdensome process," he recounts.

Hoover checked out CMS products from Microsoft Corp., RedDot Solutions Corp. in New York and CrownPeak Technology in Los Angeles, with an eye toward a hosted system because of a previous good experience with ASP versions of sales force automation technology. After the review, Trek selected CrownPeak because of its feature set, the ability to incorporate seven languages into the workflow (including support for double-bit characters for Japanese, which is important, since Japan is a growing market for Trek) and its forms-based constructions. Cost was also a big factor, since the ASP model is substantially less expensive than a prepackaged suite.

Now Trek controls its main site, cutting out the ad agencies. It has a new Web interface and, with new user permissions, authoring and editing tools, it's off and pedaling. The new site also deftly handles outside links to Trek's dealer network.

When you're finally ready to take responsibility for content and don't need massive archiving and back-end connections, ASP content management is the right path. **41732**

THORNTON MAY A New Era of Living Data Is Coming

RESearch being conducted in conjunction with the Managing the Information Resource Program at UCLA indicates that we are a mere 10 years away from the day when every molecule on this planet could be assigned an IP address. Such a possibility underscores our need to intellectually grasp the massive changes afoot in the evolution of information and its management.

I wonder if we're prepared for the upheaval ahead. In his 1934 seminal work, *Technics and Civilization*, Lewis Mumford, the premier technology historian of the early 20th century, described the first three eras of modern technology as follows:

■ **The Eotechnic Epoch:** Machines are made of wood and are driven by water or wind.

■ **The Paleotechnic Epoch:** Machines are

made of iron and are driven by steam.

■ **The Neotechnic Epoch:** Machines are made of engineered materials and are driven by electricity.

The early days of technology were primarily focused on the physical movement of things. And we haven't altered our views much since then. That's about to change.

In the not-so-distant future, in the everything-is-a-sensor world of ubiquitous IP addresses, the most successful companies will be those that are adept at a new kind of alchemy — smoothly and efficiently managing the following triple transformation:

1. Data to information.
2. Information to knowledge.
3. Knowledge to dollars or actionable executive behavior.

Contemporary futurists and trend watchers concur that the technology era we're about to enter will feature intelligent, semiaware, always-on devices made by other intelligent, semiaware devices driven by ubiquitous, nano-scale, data-collecting sensors.



THORNTON A. MAY is a longtime industry observer, management consultant and commentator. Contact him at thorntonamay@aol.com.

The next economy will be all about giving meaning to the reams of data being collected by the infinite array of sensors.

The winners will see first, understand first and act first. These happen to be central tenets of the U.S. military's transformed war-fighting concepts, which in turn are extrapolations of aerial combat tactics stressing the importance of having a more accelerated OODA loop (the ability to

observe, orient, decide and act) than an enemy pilot.

The radio frequency identification technologies currently transforming retailing and payment systems are just the tip of this iceberg. The previewed but as yet unreleased "Nixon-in-a-Tablet-PC" feature (i.e., the ability to unobtrusively record the audio and then machine-transcribe all face-to-face interactions) of Microsoft's new product line is a taste of the panoptic infolandscape we're heading for.

Unfortunately, most organizations aren't currently set up to prosper in a

truly "infomated" economy. For the longest time, IT management has treated the following not as a phrase but as a single word, with emphasis on the last four syllables: information-technology.

Historically significant practitioners of the information arts (librarians, archivists, content managers, content creators, intellectual property advocates and taxonomy creators) have been nudged further aside in the Napster-swapped/Google-searched early stages of the Information Age. The skills associated with managing knowledge (what we know and being able to discern what is worth knowing) still aren't given their due.

But they will have to be elevated in the corporate hierarchy as the infomated economy accelerates. The situation brings to mind *Star Trek: The Next Generation's* most memorable character, the sentient android, Data. The Trekkies succeeded in making data come alive. Now it's our turn. **41734**

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READERS' LETTERS

Readers Reject, Defend Rogue IT Projects

ROGUE PROJECTS ["Dealing With Rogue IT," QuickLink 40666] are necessary. I've been part of a few, and a small number that I worked on are still in use after many years. IT managers tend to plan projects to death, sometimes planning until the technologies are obsolete. I've watched them spend nine months planning to deploy backbone switches and then put them on the network using the default configuration. Most rogue applications are up and running for months before people find out about them, and they've been tested better than those from IT staff people. After all, it's in the rogue developers' best interest to ensure that everything works, since that allows them to continue to field what is needed for their users.

Tom Philo
IT specialist, Portland, Ore.

THE IT DEPARTMENT needs some respect. It's bad enough to take the blame for projects that failed due to lack of insight, funding or understanding. It's even worse to

be blamed for failed projects that the department had no handle on. If IT departments tolerate rogue IT, the result will be squandered resources as departments re-create unneeded processes. Would your sales unit tolerate IT making sales calls to your best customers?

Benjamin M. Vogel
IT director, Protect-all Inc.,
Darien, Wis.

WHY DO YOU THINK business people go around IT? A better question is, Why should we go through an outfit that is dedicated to destroying us? Rogue IT is unfortunate, but why aren't you asking why there is a need for it? Why not ask why IT doesn't help us fools down in the trenches?

Vic Watkins
Ogden, Utah

WHETHER OR NOT rogue IT projects make sense probably depends on whether the IT group or the business units are more capable of determining ROI. ROI is best determined as a joint effort, but

many centralized IT groups seem to be determined to run without accountability, and many companies haven't put in place the appropriate processes to allow for effective communication. Funnily enough, when I saw the title of the article "Dealing with Rogue IT," I initially thought it was going to be about IT departments that have stopped looking at the impact of their actions on the rest of the business.

Scott Albrecht
Chicago

IT DEPARTMENTS generally want to maintain what they know, but what they know isn't up to date with new technology. "Rogue" efforts result when centralized IT becomes so ossified or out of touch with user needs that IT policies prevent reasonable business workflow support. Some technologies that were disparaged by backwards-looking IT departments include PCs, PC LANs, e-mail, Internet access, departmental Web sites, instant messaging and Web apps. When there are many rogue efforts, it means IT is failing to keep up with available technology and to communicate.

It's better to issue standards than rules. The rule "You may not have wireless" is far less productive than the guideline "Any net devices must allow verification of every user."

James Nickson
Ronin Software Group,
New York,
j@roninsoftwaregroup.com

IENJOYED Gary Anthes' article on dealing with rogue IT activity, but I wish he had addressed how to cope when the CIO is the one who is driving these projects behind IT's back.

Don Yevin
Systems programmer, Phoenix

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CASE STUDY

Cruise Line Changes BI Tack

Holland America Line is replacing a cumbersome, big-iron-based business intelligence reporting system with a Web-based one that end users can more easily and flexibly access. **Page 32**

QUICKSTUDY

Aspect-Oriented Programming

AOP is a way of creating common or similar functionality needed by different parts of a program. In this method, specialized mechanisms compose code modules, called aspects, into a coherent program. **Page 33**

SECURITY MANAGER'S JOURNAL

Mop-up Continues in Worm Aftermath

Without automated tools to manage patches and virus updates, Mathias Thurman's effort to eradicate Blaster fails and the worm continues to creep in through unprotected machines. **Page 34**

JOHNSAWYER manages data centers for corporate clients every day. His company, Johnson Controls Inc., has plenty of experience in data center design and management. Nonetheless, the Milwaukee-based company's carefully designed and planned data center recently experienced overheating problems after installing blade servers.

INSIDE

Blade servers offer many advantages over 1U servers, but they're not always the better choice.

Page 30

Many data center managers are just beginning to contemplate large-scale deployments with multiple racks of ultra-compact blade servers. These new systems take up far less space than traditional rack-mounted servers, but they dramatically increase heat density. Throwing multiple racks of them into a data center can result in problems ranging from outright failures to unexplained slowdowns and shortened equipment life.

"Today, because of the way the air handlers are configured, we can't handle more than 2 kilowatts per rack," says Sawyer, head of critical facility management services at Johnson Controls. Sawyer says new air-handling equipment can boost that figure into the 3-to-4-kw range. But new blade servers could consume 15 kw per hour or more when fully loaded. That equates to more British thermal units per square foot than a typical household oven and requires a cooling capacity sufficient to air-condition two

Ultradense 1U and blade server racks are blazingly fast – and amazingly hot. Keeping them from burning up is more complicated than you might think. By Robert L. Mitchell

Moving Toward Melt-down

homes, facilities engineers say. So Sawyer can spread out the racks or partially fill each one to reduce overall wattage per square foot, or he can add localized, spot-cooling systems.

Although most data centers don't have many high-density racks today, data center managers are beginning to replace server racks with more compact designs, some of which accommodate more than 300 servers in a single 42U rack. (1U is 1.75 in.) "You can see a train wreck coming," says Kenneth Brill, executive director at The Uptime Institute Inc. in Santa Fe, N.M.

And while vendors say their systems are designed to run efficiently in fully loaded racks, they don't necessarily take into account the broader impact that large numbers of such racks will have on the rest of the data center.

"We can deal with one or two of these things, but we don't know how to deal with lots of them," says Brill.

The problem is compounded by two facts: Every data center is designed differently, and the industry has yet to agree on a standard for designing data center cooling systems that can handle 15 to 20 kw per rack.

The current guidelines from the American Society of Heating, Refrigerating and Air-Conditioning Engineers Inc. (ASHRAE) are outdated, says Edward Koplin, president of Jack Dale Associates PC, an engineering consulting firm in Baltimore. "Design engineers are using standards from the days of punch cards and water-cooled

Continued on page 26



Continued from page 25

mainframes," he says. Atlanta-based ASHRAE is working hard on new thermal guidelines, says Don Beaty, chair of the group's High-density Electronic Equipment Facility Cooling Committee. He expects a published standard by year's end.

But rack cooling is a big concern right now for Ron Richardson, staff manager in the IT operations center at Qualcomm Inc. in San Diego. The company's chip division wants to upgrade a large engineering compute farm to make the best use of its design software. "If our business unit had its

way, they would want 100 racks full of [blade] servers, but I don't think we'll be able to do that. Fifteen kilowatts is incredible. You have to do extraordinary things to cool that unless you want to burn them up," he says. And the idea of leaving racks partially filled is a nonstarter. "Who wants to put servers in [part of] the rack and leave the rest empty?" he says.

Some heat-related problems come from inadequately designed environments, say engineers. "We find that people consistently have trouble cooling 2- or 3-kw racks. It's common to find a 10-degree difference between the floor and the top," says Pitt Turner, principal at ComputerSite Engineering Inc., also in Santa Fe, and a consultant at The Uptime Institute. The problem is usually airflow. "Normally, we find excess [cooling] capacity is installed in the floor, and it's poorly used," he says.

Avoiding a Blowout

When rack-top temperatures exceed 75 degrees Fahrenheit, heat-related problems, such as failures or shortened equipment life, may begin to crop up. In addition, many high-end blade processors are designed to reduce clock speed as temperatures rise. This protects components, but administrators who aren't monitoring air-intake temperature at the top of the racks might misinterpret the cause and add more blades to try to increase performance, adding fuel to the not-so-proverbial fire, Brill says.

Richardson decided to design a new data center to accommodate blade servers. "We believe we can do 10 kw per rack," he says. The plan uses a hot aisle/cold aisle design that involves placing rows of racks so that racks face one another. Chilled air from the cold-aisle floor passes into each rack and out the back into hot-air aisles, where it's removed and cooled again.

Going beyond that would require adding spot cooling devices to individual racks. Liebert Corp., a Columbus, Ohio-based division of Emerson Network Power Systems Inc., offers devices designed to pull hot air out of racks and cool it quickly, including ceiling-mounted air-conditioning units and bolt-on exhaust fans that suck hot air directly off the back of racks. The problem with that approach is scalability, says Brian Benson, senior mechanical engineer at consulting firm Mazzetti & Associates Inc. in San Francisco. "If you put 500 of those racks in, your scalability and the maintenance [requirement] become incredible," he says.

Consultants disagree on how many

Racking Up the Wattage

Maximum kilowatts consumed in a fully populated, 42U rack

| | |
|---|------|
| IBM eServer Blade Center HS20 (84 blades) | 15 |
| Sun SunFire B series (224 blades) | 14 |
| RLX ServerBlade 3000i (70 blades) | 13.3 |
| Dell PowerEdge 1655MC (84 blades) | 11.9 |
| HP ProLiant BL e-Class (280 blades) | 9 |
| Home oven | 8 |

These are the maximum power requirements for a sampling of server blades when operating in a fully loaded rack. Maximum blades per rack and wattage information is based on vendor-supplied data. The household oven wattage is included as a reference point for relative overall heat load but is not directly comparable since server racks are taller and have a larger volume.

kilowatts can be cooled effectively with a traditional, raised-floor computer room air-conditioning system. Most say 4 to 5 kw is the upper limit, but the real-world answer depends on each data center's design.

Each kilowatt of load requires passing 140 cubic feet per minute of air through the rack for proper cooling, says Fred Stack, a vice president at Liebert. "In tomorrow's rack, you're looking at [more than] 1,000 cubic feet of air per minute," he says.

That's solvable, says Brill, but there's no margin for error. "You absolutely have to do about a dozen things correctly, and most sites aren't going to do that," he says. That includes adequate under-floor space that's sealed and clear of cabling, pipes and other obstructions as well as racks that are meticulously sealed to control airflow.

Buying extra cooling capacity can be just as disastrous as an undersized system if it pushes the air under the floors too quickly, says Neil Rasmussen, chief technology officer at American Power Conversion Corp. in Kingston, R.I. "The fact that it's flowing quickly under the floor actually causes a Venturi effect that sucks air down into the floor instead of pushing it up into the cold aisle," he says. Air from the hot aisle then flows over the top of the racks and recirculates through the equipment, overheating it.

Bob Sullivan, a consultant at ComputerSite Engineering, says he has cooled 7-kw racks. But, he says, "it requires so much air coming out from under the floor that you're limited to cooling about six racks with a large cooling unit." Overall load across the data center still needs to stay at under 100 watts per square foot, he says. "Beyond that, you're losing more space to cooling than you're saving by compressing the racks," he says.

Meanwhile, blade vendors Hewlett-Packard Co., Sun Microsystems Inc. and IBM say that blades will get smaller and more powerful. IBM, which has been down this road before with mainframes, says cooling may be going back to the future. "We don't want to move to water cooling, but it feels like it's inevitable. By the end of next year, we'll be on the brink of that," says Jeff Benck, vice president of IBM's eServer BladeCenter. And by 2005, Benck says, external water systems that cool at the individual blade or blade chassis level will be required equipment.

HP's current designs use blade-mounted fans, and the company says it should be able to cool individual racks at up to 18 kw. However, Sally Stevens, director of marketing for blades at HP, doesn't recommend deploying blades in fully loaded racks.

Sun owns the Sparc CPU used in its blades and therefore has more control over the design, but Chief Technologist Subodh Bapat says the company is also looking toward liquid cooling.

As server density increases, Johnson Controls' Sawyer worries that more complex cooling designs will increase costs and create ongoing maintenance headaches. "We need an alternative that's going to be feasible and at the same time not elevate risk," he says.

Qualcomm's Richardson says he has discussed the issue with several vendors. "Every one has some little tidbit that you can learn, but nobody seems to have every answer." **41566**

CHILL OUT

Collaboration between IT and facilities staffs will be critical as server densities increase:

QuickLink 41669

ASHRAE is working on updated standards for data center cooling:

QuickLink 41664
www.computerworld.com

Hot Tips

For Keeping Racks Cool

- 1 Consider spreading out hot racks to reduce average heat density per square foot.
- 2 Map the vertical profile of intake air temperatures in the computer room at least once a quarter. Keep temperatures at or below 75 degrees.
- 3 Use a hot aisle/cold aisle configuration and follow best practices. (See QuickLink a3650.)
- 4 Install internal blanking panels to fill openings within the face of the rack or cabinet to prevent internal back-to-front hot-air recirculation.
- 5 Keep bypass airflow under raised floors at 10% or below by sealing raised floor openings.
- 6 Install the proper quantity of perforated tiles in the cold aisle. Use 40% or 60% open grates for densities above 3 kw per cabinet.
- 7 Remove turning vanes on cooling-unit discharge air ducts. These increase vertical cold-air velocity and starve equipment closest to the cooling unit.
- 8 Raise cooling unit return-air set points to 72 degrees to reduce dehumidification and increase available cooling capacity. (Do only after bypass airflow is at or below 20%).
- 9 Consider relocating cooling units if hot spots persist.
- 10 Keep that old mainframe water-cooling system. Chilled water will be coming back within 12 to 24 months for high-end blade-server products.

SOURCE: THE UPTIME INSTITUTE INC., SANTA FE, N.M.



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The image shows a dark, industrial interior, possibly a server room or a tunnel. The walls are lined with rows of equipment or racks, and the floor is made of large, light-colored tiles. The lighting is dim, creating a moody atmosphere. Overlaid on this background is the text "Out of Space" in a large, white, sans-serif font. The text is positioned in the upper half of the image, with "Out of" on the top line and "Space" on the bottom line. The letters are slightly transparent, allowing the background details to be seen through them.

Out of
Space

This image is a duplicate of the one above, showing the same dark industrial interior with rows of equipment and a tiled floor. Overlaid on this background is the text "Tons of Space" in a large, white, sans-serif font. The text is positioned in the upper half of the image, with "Tons of" on the top line and "Space" on the bottom line. The letters are slightly transparent, allowing the background details to be seen through them.

Tons of
Space

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Weighing the Change to Blades

New advances are extending the range of applications for blade servers, but in many situations, a traditional server may still be the best choice. By Julia King

AS IBM, HEWLETT-PACKARD CO. and other system vendors push to market ever more powerful and lower-cost blade servers, evidence is mounting that these ultracompact servers may be ready to move beyond traditional applications such as Web server farms. But users and analysts say they're more likely to coexist with traditional rack servers than they are to replace them.

Blade servers reduce hardware components and save data center space by condensing the power and bulk of traditional servers onto a single high-density circuit board. These typically plug vertically into a chassis that's 3U or taller and slides neatly into a standard server rack. (A 1U device is 1.75 in. high.)

Blade servers can also be more flexible and easier to manage than traditional, rack-mounted servers. This flexibility comes from the ability to swap out different preconfigured blades into a single chassis as business requirements change.

But such advantages over compact 1U servers so far haven't — and shouldn't — make blade servers the automatic choice every time, analysts and users say.

A Different Architecture

"There's still a pretty considerable role in the universe not just for 1U servers, but for 2Us and 3Us," particularly where there's a need for local data storage, says Jonathan Eunice, an analyst at Illuminata Inc. in Nashua, N.H. "When you get to blades, which are sub-U density, you start to lose the space to put in disk drives."

Some blades, such as IBM's HS20, offer onboard support for a few disk drives. But most blades gain access to

storage through a Fibre Channel link or across Ethernet. "That's a different architecture than many users are accustomed to, so blades mean a cultural shift to remote storage," Eunice says.

"There are times when a 1U [server] makes more sense," says Jeff Benck, director of blade server products at IBM. Specifically, if a user is looking to deploy fewer than five servers, blades aren't the right choice, he notes.

At the same time, developments in blades, such as the addition of more powerful processors and new network and storage connectivity options, are enabling their deployment for a wider range of enterprise applications that must scale up instead of out, such as databases, vendors say.

HP's four-processor BL40p blade, for example, has dual onboard PCI-X slots that accommodate Fibre Channel host bus adapters for connecting to large storage-area network (SAN) clusters used in running corporate applications, such as mes-

saging or ERP systems, says Sally Stevens, HP's director of blade server platforms. "This line of blade servers addresses enterprise-class applications. We can hit all of the applications a traditional server hits," she claims.

For Larry Scott, manager of server support at Dollar Rent A Car Inc. in Tulsa, Okla., cost was the primary driver behind the company's decision to move to HP ProLiant BL e-Class blade servers for a range of applications that includes front-end Web services to midlevel data center applications.

"Twelve months ago, when the whole industry was really constrained, [the ProLiant BL e-Class] was the lowest-end server you could get," Scott recalls. "Truthfully, we looked at [VM-

ware Inc.'s virtualization software], but when HP came out with its Generation 1 blades, it was the same price as VMware, and we'd really prefer hardware over software. That was the tack we took."

Also, Scott pointed out that blade servers have "a fairly nominal learning curve." HP offers software tools to aid with blade server deployment, but these tools can also be used across rack and tower servers. "So it's not limited to blades," he notes.

Meeting Processing Needs

Another blade user, Keith Grimes, chief technology officer at Memphis-based Investigation Technologies LLC, which does business under the name of Rapsheets, says he chose IBM's eServer BladeCenter to more efficiently handle the ever-increasing processing demands of customers searching the 150 million criminal records in the company's database.

"We were using IBM cluster servers and clustering together four or five servers for redundancy and fault tolerance," Grimes recalls. Now, Rapsheets is running seven blades with dual Xeon processors that boot directly off a SAN. "There are no hard drives, and BladeCenter allows 14 blades to be on one Fibre [Channel] connection [to the SAN], thereby increasing the efficiency of the processing power vs. the storage," says Grimes.

BladeCenter also makes it easier to do distributed processing, he adds. "We may search a name up to 12 different ways, flip-flopping first and last names or using initials, and the way our application is written, we can spin off the searches to different blades and let them operate on their own to optimize the database and then return all of the results and aggregate them," he notes.

"I can search by first name, last name and date of birth and create an index. Then I can create another index on the last name and middle name. It's faster than having both indexes on one database," he says, adding that the turnaround time is less than a second.

One downside to blades is that they have problems with heat dissipation (see story, page 25). "IBM has actually installed a blower on the back of the blade chassis that can get pretty loud. It sounds like a small jet engine or several hair dryers taking off at once," Grimes says. Rapsheets houses the server rack in a separate, air-conditioned room. Users considering migrating to blades should plan for their cooling requirements accordingly, Grimes notes.

Q 41248

Blade Offerings

A sampling of options from major server vendors

Hewlett-Packard Co.

■ **Offerings:** HP's BL series includes one- to four-processor blades with optional support for two onboard 2Gbit/sec. Fibre Channel host bus adapters in its BL40p blades. HP also offers a high-density, single-processor BL e-Class server line.

■ **Differentiation:** HP is the only vendor currently offering four-processor blades.

IBM

■ **Offerings:** Dual-processor HS20 server blades for its BladeCenter line; IBM plans to introduce a four-processor blade with SAN connectivity later this year. IBM's blades include integrated Gigabit Ethernet.

■ **Differentiation:** IBM claims it was the first to offer an integrated Layer 2-7 Ethernet switch that plugs into its blade chassis. Functions include routing, application health checking, network and application load balancing, and embedded security.

Sun Microsystems Inc.

■ **Offerings:** The Sun Fire B1600 Blade Platform supports up to 16 blade servers based on Sun UltraSparc processors or Intel Corp. x86 processors in a 3U chassis. The x86 blades will run Solaris or Linux; Sparc blades run only Solaris.

■ **Differentiation:** Sun is the only vendor to offer mix-and-match operating system capabilities on its blades.

Dell Inc.

■ **Offerings:** Dell's dual-processor PowerEdge 1655MC accommodates up to six server blades in a 3U chassis.

■ **Differentiation:** Dell touts its free OpManage Remote Install tool that lets users set up and capture an image of the server operating system and transmit it across a network to configure new blades.

RLX Technologies Inc.

■ **Offerings:** Offers blade servers that use both Transmeta Corp. and Intel processors. RLX ServerBlades plug into a chassis and include dual onboard Ethernet connections and up to two hard drives. Its performance blades include support for dual 4x InfiniBand or 2Gbit/sec. Fibre Channel adapters.

■ **Differentiation:** RLX says its blade-server management tools are its biggest advantage.

"There's still a pretty considerable role in the universe not just for 1U servers, but for 2Us and 3Us."

Jonathan Eunice,
analyst, Illuminata Inc.



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Cruise Line Changes BI Tack

Web-based reporting system promises returns in sales, marketing and management. By Marc L. Songini

IN AN ATTEMPT TO NAVIGATE rough economic seas, Holland America Line Inc. is trading its cumbersome old big-iron-based business intelligence reporting system for a Web-based one that end users can more easily and flexibly access.

The move was triggered by the Seattle-based cruise company's decision to use improved BI tools in order to make an additional \$1 million annually through more efficient sales, marketing and revenue management. This required changes to its existing reporting and analysis system.

Prior to launching the upgrade to

the new reporting system a year ago, the information systems staff needed to access operations information from the company's IBM S/390 mainframe and format it into reports, says Jon Dawson, Holland America project manager.

CASE STUDY

The reports included everything from small, ad hoc inquiries to major "canned" reports that were prepared weekly

to assess the company's revenue and inventory performance, says Paul Grigsby, senior revenue manager at Holland America.

To improve this system, Holland America installed software from Infor-

mation Builders Inc., a New York-based BI software maker. Dawson says the cruise company implemented Information Builders' WebFocus analysis tool to connect to the mainframe through an adapter and pull out the relevant information for queries and reports. The application, which runs on a Sun Microsystems Inc. box with a single CPU, uses extract, transform and load data-prepping technology for use with Microsoft Excel or Word. The system also includes WebFocus Reporting Server, which enables users to do analysis, reporting and querying.

Dawson says that turning around report requests previously took up to two days. Using the WebFocus BI dashboard, Holland America's IS staff can fine-tune parameters and turn over reports to end users almost immediately.

Some end users even make their own reports. But in order to do that they need to be trained and, as Dawson says, "spend the time to get to know the data."

According to Grigsby, WebFocus is primarily used by revenue management personnel for the smaller reports, whereas IS staffers working off the mainframe still handle the bigger ones.

Starting Slowly

"We're still growing the system," says Dawson. "It's the tip of the iceberg."

For instance, Holland America is working to define the data needed from the ships to analyze onboard spending by department and for specific excursion purposes. The company is facing limitations because of the size of the existing database system, says Dawson, so it plans to load the information into an Oracle Corp.-based data warehouse by December.

End users are already noticing a difference. A report that required coding and printing by IS staffers and took days to complete now takes just minutes to run with WebFocus on a PC, says Grigsby. "And this is where the flexibility comes into play," he adds. "If I wish to see a different view of the same information, I can simply change the sort sequence or introduce new fields into the inquiry without having to formally request a new report from the information systems department. It makes both my time and the information systems department's time more efficient."

The reports are indeed more flexible and easier to get to, says Teresa Tennant, manager of online communications for the shore excursion department at Holland America. Currently, the IT department and a BI specialist

Holland America

HEADQUARTERS: Seattle

BUSINESS PROBLEM: End users were unable to access useful data easily, which was costing the company money.

SOLUTION: The company replaced a mainframe-based business intelligence reporting system with a Web-based reporting and analysis system.

prepare reports for her, but Tennant plans to be trained to prepare them herself.

After the report is written, she can get it by logging into a Web site and accessing it in whatever format she wants — Excel or Word document or PDF. Tennant needs several types of reports for her work and she's able to select them from a complete menu.

"It's very handy. I can drill down into complete details of the booking by travel agency and individual," she says.

There was some doubt among the company's end users when the project began, says Grigsby. "We are yield managers, not computer programmers, and I was frankly suspicious about putting the reporting function in our hands," he explains. "However, after training and a goodly amount of trial and error, we began to see the rewards of empowering the end users."

Given current conditions in the travel industry, which has been squeezed by factors like the SARS outbreak, the war in Iraq and the down economy, Holland America needed to be able to rapidly identify and track industry trends, says Bill Hostmann, an analyst at Gartner Inc. in Stamford, Conn.

The real value of the new system at Holland America, Hostmann says, "is how it makes it easier to develop and distribute business management information to more users in a timely fashion around the world than ever before and thereby more fully leverage existing IT investments." ☎ 41567

"We're still growing the system. It's the tip of the iceberg."

JON DAWSON, PROJECT MANAGER,
HOLLAND AMERICA

Middleware.
It's at the movies.

Aspect-Oriented Programming

DEFINITION

Aspect-oriented programming is a new way of creating common or similar functionality needed by different parts of a program. Programmers describe needed behavior in modules called aspects and then rely on specialized AOP mechanisms to weave or compose them into a coherent program.

BY RUSSELL KAY

TO UNDERSTAND aspect-oriented programming (AOP), let's first take a look at two models of labor union organization in the U.S. The old American Federation of Labor organized workers vertically, according to their particular craft or trade. Thus, a large company might have dozens or hundreds of unions to deal with, each representing a specific group of workers. The younger Congress of Industrial Organizations, on the other hand, organized a single union for all workers in a given industry regardless of their individual trades.

Under the AFL approach, each separate craft union needed its own officers and organizers, and each would have to negotiate separately with management. The CIO's horizontal approach, however, cut across the different trades; it could provide similar services and benefits for all workers in a company en masse.

Traditional programming methodologies, even structured and object-oriented approaches, are vertical or hierarchical in nature, like the AFL model. For any given application, there are a number of common operations that, because of minor differences in their logic, the way they're

handled, the other modules they interact with or the data they use, must be programmed separately. With AOP, the idea is to look at these operations and abstract them in such a way that they can be called from anywhere.

Method Calls

AOP uses a new type of software module, called an aspect, that cuts across traditional classes and organizational models. The essence of AOP is that every object-oriented program, well designed or not, contains some method calls that appear in several places throughout the program.

QUICK STUDY

Method calls transfer control to a specific closed subroutine within a program. If you change the call to a particular method or its error-handling routine, you may need to make changes in every occurrence of this call — potentially requiring hundreds or thousands of manual edits. Such crosscutting typically occurs in distribution, synchronization, failure handling, policy enforcement and performance optimization, as well as in a number of common design patterns.

Prior to AOP, developers found it difficult to deal with this crosscutting behavior, because separate pieces of identical or nearly identical code

were scattered throughout many different modules. AOP lets you program an aspect once and then reuse it. AOP encapsulates behaviors that affect multiple classes into reusable modules. A code weaver (which can be an interpreter, compiler or preprocessor) then combines the aspects and the classes appropriately.

Some developers have been concerned because when you make a change in an aspect,

there's generally no simple way to know which modules will be affected by it. But AOP integrated development environment extensions address this problem, making it possible to browse the crosscutting structure of aspects.

3-D Programming

From their earliest days, programming languages and methodologies have used various kinds of modular construction, such as subroutines, functions, procedures and objects.

Modularity made programs easier to write and debug and allowed reuse of sections of code. Previous forms of modularity are, however, primarily hierarchical — layers of procedure libraries, object-oriented class graphs and others. AOP adds to this the ability to work with a modular structure that cuts across these hierarchies.

Another way to look at AOP programming is by relating it to dimensionality. Procedural programming deals with all concerns in a line. Though we can move pieces of code into different functions, the main stream still controls the entire process. This is the linear, one-dimensional model.

When object-oriented programming is introduced, we can present the world in computer language in a more natural way by describing different objects and their functions. Connections between different objects form a network. We can think of this as a 2-D model.

AOP recognizes that this model needs more dimensions, because crosscutting or distributed code can be seen as making extra connections that can't be mapped in a 2-D space. AOP connects program components in a 3-D way without disrupting existing connections and relationships. **41505**


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USING AOP

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An AOP Glossary

ADVICE: Code that runs after certain conditions are met. Advices allow you to transparently apply things like logging and metrics to an object model.

ASPECT: A construct, resembling classes, for addressing concerns that cut across classes. An aspect can contain methods and fields, extend other classes or aspects, and implement interfaces.

CONCERN: Some functionality or requirement necessary in a system that may or may not have been implemented in a code structure. Concerns can range from high-level notions like security and quality of service to low-level notions such as caching and buffering. They can be functional, like features or

business rules, or systemic, such as synchronization and transaction management.

CROSSCUTTING: Two concerns crosscut if the methods related to those concerns intersect. An aspect crosscuts the traditional class and method boundaries by applying the same code in each.

INTERCEPTOR: Used to implement an advice in JBoss 4.0, a popular Java application server.

INTRODUCTION: A way to add methods or fields to an existing class, to bring multiple inheritance to plain Java classes or to attach a new API to an existing object model. Used in JBoss 4.0.

JOINPOINTS: Points, or hooks, in a program's execution where enhancements can be added or behav-

iors attached. For example, joinpoints could define calls to specific methods in a class.

METADATA: Additional information that can be attached to a class or a given instance of an object, either statically or at runtime. Metadata helps when writing truly generic aspects that can be applied to any object, but the logic needs to know class-specific information.

POINTCUTS: Program constructs that designate joinpoints and collect specific context at those points.

WEAVE: To assemble an individual concern into a process by interlacing different execution-logic fragments according to some supplied criteria.

Mop-up Continues In Worm Aftermath

Without automated tools in place, patch and virus signature update compliance become increasingly difficult to manage.

By Mathias Thurman

IT HAS BEEN MORE than a month since the Blaster worm hit, and my company is still having problems. The main one is that we have thousands of desktops and my security team and I don't have a strong and fully automated way to identify and track updates on them.

This situation is a nuisance, if not a crisis. We know what to do, and we've communicated the need to keep updates current to all employees, but things don't always happen the way we'd like.

We've made some network configurations within our routers to limit the damage as much as possible, but in some instances that has prevented legitimate business activity from occurring. In some of those cases, we've had to remove added access-control lists because it's more important to have revenue-generating functions working than it is to prevent the Blaster worm from propagating.

Another challenge I face is political. At other companies where I've worked, the desktop support group was responsible for virus removal and prevention, while the IT security group tracked down the source of any malicious activity. I never wanted the security team to be the focal point for virus eradication within the organization, but detection and eradication have morphed into IT security department responsibilities. I'd like to change that, but if I start trying to shift responsibilities at this stage of the game, I'll only

generate resentment from other organizations. So, my staffers — all four of them — are stuck dealing with virus updates and patches for nearly 10,000 desktops. That said, we are making progress. Hopefully, within the next week we'll have cleaned up the environment completely — until the next variant comes along.

Other than the Blaster fallout, this week was fairly quiet. I haven't started looking for a replacement for our recently departed security engineer

because management has asked that I hold off hiring until the end of the year. In the meantime, I have authorization to hire a consultant if needed.

I've had good luck with consultants in the past. The only problem is that they eventually leave. At that point, if the consultant hasn't generated the proper amount of documentation and transferred critical knowledge to the staff, we're left with an unmanageable project.

In one case, I hired a consultant to build intrusion-detection sensors. No one was

working with the consultant, however, and when he left, he didn't show us the configuration or give us the passwords to the system. Luckily, we were able to call him back in, and he provided that information free of charge.

We now have very strict agreements that specifically identify documents that must be produced each week so that we don't run into such problems in the future.

Keeping Up to Date

I decided to take advantage of the lull in activity within my department to review our server baseline images to make sure we're keeping up with patches and other configuration issues that affect both our "jump-start" infrastructure for new installations and the retrofit of our existing systems. I also examined our network infrastructure to ensure that the same controls are in place for our networking gear.

Within the department, we have been keeping track of advisories and patch releases from our major operating system, hardware and software vendors. We typically do this by subscribing to various automated advisory services and visiting certain Web sites. We then forward the advisories to the relevant departments for implementation.

For example, Cisco last week rereleased an advisory that it first announced in July relating to the potential for denial-of-service attacks on its Catalyst switches. I forwarded the advisory to our network group, but I never followed up to ensure that the appropriate software updates for the Catalyst switches were installed.

The network engineering department maintains a list of all our routers and switches. I selected a group of switches at

random and asked one of the network engineers to capture the configuration data by issuing the "show running config" command and to send the results to me by e-mail.

Unfortunately, this clunky method is the quickest way for me to verify that our switches aren't susceptible to this vulnerability. At some point, we will invest in patch management software, but that didn't make this year's budget.

After reviewing the list of switches, I found that quite a few hadn't been upgraded. However, this was mainly due to the fact that Cisco hadn't supplied the maintenance release for one particular version of the switch. In lieu of that, our network engineers took mitigating steps by configuring access-control lists on the switches to allow only legitimate workstations to connect to the administrative port on the switches.

I also checked on a recent vulnerability in the Solaris 9 file transfer protocol server software. The FTP server is based on WU-FTPD, a file-transfer program from Washington University in St. Louis.

The program has a buffer overflow vulnerability that an attacker can exploit to gain unauthorized root-level access. This can be remedied with a patch. I reasoned that if I checked our FTP servers for the presence of the patch and found it to be consistently installed, I could assume that the systems administrators are attending to patch management on a regular basis. Once we get our hands on some patch management software, we hope to automate the auditing of our infrastructure. At this point, I'm looking for suggestions. But there's no sense moving forward until we have a budget for this in place. ▀

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussion in our forum. **QuickLink a1590**

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SECURITY LOG

Security Bookshelf

Incident Response and Computer Forensics, Second Edition, by Chris Prosise, Kevin Mandia and Matt Pepe; McGraw-Hill Osborne Media, 2003.

The most difficult aspect of an intrusion investigation is the analysis of the forensic evidence. Whether you're a newbie or a seasoned professional, this book is a great reference to use during an investigation or to review to keep up your forensics skills. Packed with some great material and presented in a readable style, this book takes security professionals from initial data collection through an actual analysis. It includes plenty of references, real-world examples and explanations of tools and techniques.

— Mathias Thurman

Layer 7 Offers Web Services Security

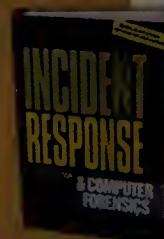
Start-up Layer 7 Technologies Inc. has introduced SecureSpan Solution, a set of products for securing and connecting Web services that includes a gateway appliance, a software policy manager and an agent technology.

SecureSpan Gateway enforces security and access policies across multiple endpoints, while SecureSpan Manager creates and manages the policies and routes them to agents that sit on the endpoint (the consumer of the Web service).

The gateway can deliver a different set of policies for each endpoint, according to the Vancouver, British Columbia-based company.

Layer 7 co-founder and Chief Technology Officer Toufic Boubez co-authored the UDDI service discovery protocol and was once the chief architect for IBM's Web services initiatives.

SecureSpan Solution, priced at \$100,000, will be available this month.



**SECURITY
MANAGER'S
JOURNAL**

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My staffers — all four of them — are stuck dealing with virus updates and patches for nearly 10,000 desktops.

PAUL A. STRASSMANN

IT Spending: The CFOs Strike Back

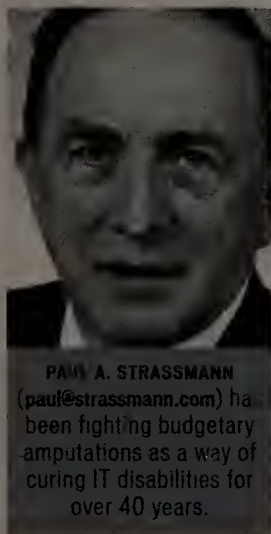
IN 2000, the *CIO Magazine* Tech Poll reported a 22% annual growth rate in IT budgets. The same poll has recorded growth rates below 2% from January 2002 to the present.

For the past two years, CIOs have persistently predicted a resurgence in IT spending. But the harsh reality is that chief financial officers now dictate IT spending, and they will throttle IT budgets until there's hard evidence that IT delivers profits.

How CFOs can extract proof of IT profitability is a source of puzzlement. During the years of easy IT money, the established procedures for capital budgeting couldn't cope with a growing appetite for computerization. Now that companies have slammed on the brakes, CFOs are searching for new ways to harness IT.

The most elaborate scheme yet is the one the Office of Management and Budget conceived for constraining the more than \$57 billion in annual federal IT spending (or \$32,000 per employee). OMB efforts, conducted under the federal enterprise architecture and e-government strategies, are scripts for imposing order and uniformity on an IT landscape that comprises more than 100 independent agencies and includes more than 5,000 major projects. The OMB plan reflects the thinking of many CFOs and is therefore worthy of attention. It would do the following:

1. Impose a standard method for classifying IT expenses. An elaborate business-reference model defines how to describe the business operations of the federal government. The purpose is to capture information about any du-



PAUL A. STRASSMANN (paul@strassmann.com) has been fighting budgetary amputations as a way of curing IT disabilities for over 40 years.

plication of efforts.

2. Prescribe a self-appraisal method for characterizing the performance of IT, with an emphasis on identifying system deficiencies. The purpose is to identify targets where IT spending must be examined.

3. Require classification of governmentwide standard IT components to enable consolidation of application development. The purpose is to set the stage for centralized procurement of

software and services.

4. Direct IT organizations to conform with a technical reference model for reuse of technology. The purpose is to establish favorable conditions for creating a shared infrastructure that would save money.

5. Require the submission of a "business case" for every project. It's through the scrutiny of such business cases that the CFO intends to assert budgetary controls. OMB officials have already declared that "771 projects in FY04 budget (for \$20.9B) are 'at risk' and will not be allowed to proceed." So how do OMB budget examiners sort out which of the more than 5,000 projects are at risk?

The so-called business-case forms have been conceived by auditors for budget examiners. For each proj-

ect, the CIO of the organization must fill out a form containing 132 detailed questions about the best IT practices ever conceived by consultants. The checklist covers topics such as demonstrated fit with business strategy, linking to management plans, support of a modernization strategy, demonstration of low-risk acquisition methods, proofs of strong project management, closing of performance gaps, assurance of security over a project's life cycle, privacy protection, paperwork reduction, management of risk-adjusted life cycle costs — and many others.

For good measure, the business-case forms require documented confirmation of compliance with a long list of regulatory and legislative measures.

To sort out which projects are at risk, the OMB follows a routine procedure. First, each item for every project is rated on a scale from 1 to 5.

Second, all of the scores are added up, regardless of their importance, though a poor score in a few selected areas (such as security) will automatically disqualify the entire project. If the scores fall below predefined levels, the project is classified as being at risk and scheduled for further examination. Projects with low scores won't be funded.

How effective is the OMB methodology in delivering the stated objectives of savings through sharing of IT resources? One way of judging that is to examine the OMB schedule of fiscal 2004 governmentwide sharing of IT. If you remove unique Homeland Security Department projects, you end up with only 0.21% of the total federal IT budget as benefiting from synergy through sharing. I guess that leaves the OMB — like many CFOs — with the hatchet-on-a-pole method of IT budget pruning and management. **41348**

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Middleware.
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OK, our marketing is not as good as our technology.

Business Intelligence Vendor Rating

| | Marketing Rating | Technology Rating |
|------------------|------------------|-------------------|
| MicroStrategy | ★ ★ ★ | ★ ★ ★ ★ ★ |
| Cognos | ★ ★ ★ ★ | ★ ★ ★ |
| Business Objects | ★ ★ ★ ★ ★ | ★ ★ ★ |

Source: Leading Industry Analyst (2003)

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Cultivating Agriculture E-business

By combining three industry databases into one, agribusinesses are realizing savings and more efficiency through the supply chain. **Page 42**

Law Firms Open Up

Legal firms are using extranets to appease clients who want information access and savings on operating costs — but with discretion. **Page 43**



QUOTE OF THE WEEK

“If you stop trying to gather requirements and start negotiating them, your projects will yield richer crops.

— Paul Glen, columnist and principal, C2 Consulting, page 46



“Our analytic expertise . . . is just not that deep” and outsourcing was cheaper, says Canon ITS's Mike Larson.

SIMON GRIFFITHS

OUTSOURCING BI WITH CONTROL

Whether you choose to farm out all or part of your **BUSINESS INTELLIGENCE**, you need to make sure the quality of your data won't suffer. **BY MARK LEON**

BUSINESS INTELLIGENCE — the collection and analysis of a company's most valuable data — seems an unlikely task to farm out to contractors. But some companies are doing exactly that. Why? Because they lack the in-house skills needed to perform statistical analysis or maintain a data warehouse. And if you want to turn BI over to the experts, there are more options than ever — along with the same big worry: losing control of your data quality.

At Canon Information Technology Services in Chesapeake, Va., the technical support subsidiary of Canon Inc., the decision to outsource data mining and analytics was simply a case of finding people with the right expertise at the right cost.

“I had been doing [basic] analyses on Excel spreadsheets of our customer feedback data,” says Mike Larson, assistant director of product and process quality at Canon ITS. But he wanted more power to do full-fledged data mining and the ability to give support managers online access to reports.

“Our analytic expertise, when it comes to slicing and dicing information, is just not that deep,” Larson says. So that left him with two options: buy packaged analytic software or outsource.

After looking at what it would cost to buy the applications and infrastructure and hire additional staff, Larson explains, Canon ITS concluded that it would cost at least twice as much to do the work in-house as it would to hire CustomerSat Inc., an application service provider in Mountain View, Calif. The ASP's clients pay annual hosting fees of about \$100,000 on average, according to a CustomerSat spokesman. Canon ITS signed a one-year contract in April, and the service went live in June.

Each night, CustomerSat uploads data from Canon ITS's two CRM systems, which handle phone and e-mail support. A typical data set includes items such as customer name, description of problem, product purchased and type of interface employed.

“Data quality is a very hot issue for us,” says Larson. “The data we export to CustomerSat is just part of a bigger initiative” that involves taking responsibility for data quality across the multiple in-house customer databases. “We screen for things such as duplicate names and bad e-mail addresses,” he says. And Larson does some tweaking on his own, such as setting up business rules to ensure data quality.

Continued on page 40

Middleware is Everywhere.

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CustomerSat generates daily, in-depth questionnaires that go out to a random sampling of Canon ITS customers, and Larson keeps an eye on the process and sample sizes. The responses are loaded into the hosted database and later viewed as reports and graphs via a standard browser.

"A few years ago, you really couldn't do any customization on your application if you chose to go with an ASP," says Guy Creese, an analyst at Aberdeen Group Inc. in Boston. "ASPs now give you far more options. It is no longer take it or leave it."

Although Larson is happy with his service provider, he says Canon ITS might eventually bring some of the analytics back in-house. He says the company is "looking at some bigger projects involving more demographic analyses" and is considering buying analytic software from a vendor like Cognos Inc. or Business Objects SA for those efforts.

This hybrid approach to BI is becoming a trend, says Creese. "I think we will see more of this: You outsource where it makes sense and keep the rest in-house."

ETL Is Heavy Lifting

Canon ITS, in fact, keeps the primary customer data source in-house in a PeopleSoft Inc. CRM system that feeds the CustomerSat database. Larson says the next step will be to complete the circle and allow CustomerSat to repopulate the PeopleSoft system with data mined from the hosted database.

Even in this distributed architecture, Canon ITS keeps the central data warehouse on-site and maintains primary control over data quality. But that's still a lot of work. Most companies that take full responsibility for their data warehouses need staffs trained in BI and extract, transform and load (ETL) tools, as well as a realistic perspective of the effect that a new project will have on employees and the business.

However, Creese says that it often makes sense to outsource the entire data warehouse. "Maintaining a data warehouse with all the ETL functions is heavy lifting," says Creese. "But often it can be treated as a standard, utility service. So why not outsource that

Who Does It

Here's a sampling of vendors that provide outsourced BI services:

- SageMetrics Corp., North Hollywood, Calif.
- CoreMetrics Inc., Burlingame, Calif.
- Metavante Corp., Milwaukee
- CustomerSat Inc., Mountain View, Calif.
- Harte-Hanks Inc., San Antonio
- Electronic Data Systems Corp., Plano, Texas
- Wunderman LLC, New York

piece and keep the front-end analytics, the stuff that encapsulates your business, in-house?"

That's what Synovus Financial Corp. did. "We wanted to mine our bank customer and product data more deeply," says Jeff Kennedy, director of information systems at Synovus, a \$19 billion financial services holding company in Columbus, Ga. But, he adds, "supporting a data warehouse, scrubbing and loading all that information, is not something we have ever done in the past, and we had no reason to think it was something we wanted to take on in the future."

In June 1998, Synovus outsourced an operational data warehouse to Metavante Corp., a Milwaukee-based provider of technology products and services for the financial services industry. The database supported standard functions like balance reports and audit-letter generation, says Kennedy.

"But we knew we would need a new database design to do more advanced analyses on things such as behavior within a portfolio or loan origination,"

he says. "And we wanted this to support all 40 of our banks."

In October 2001, Kennedy and his team fleshed out the specs to build a new analytic data warehouse. They met with some resistance from Metavante over the need to replace the data warehouse, Kennedy says, but eventually collaborated on the design and testing. "The result was a database built in a star schema structure and still hosted by Metavante," he says. Synovus, however, kept the data mining applications in-house and is using Business Objects software with a browser interface on the front end.

Trust and Partnership

Synovus has moved five of its 40 banks onto the new system and expects to migrate the remainder by next summer. Kennedy says the new data warehouse more than pays for itself.

"We estimate that the analytics we run save us \$250,000 over and above what we pay Metavante for the service," he says. But, savings aside, this process involves turning sensitive data over to someone outside the company. Kennedy says it's OK to do that, provided you trust the outsourcer.

"With our collaboration on the analytic data warehouse," he says, "Metavante proved to us that we can work through disagreements together. We built a partnership. Their real value is

in updating the data warehouse on a daily basis, and we are confident that our data is in good hands."

One of the things all of these deals have in common is flexibility. For example, in its hybrid arrangement, Synovus could have chosen to outsource the entire BI front end.

"Outsourcing BI, or anything else, is far richer than it used to be," says Aberdeen's Creese. "It wasn't that long ago when your options were to choose between IBM or EDS to come in and run your entire IT shop for \$40 million."

Canon ITS chose to keep its primary data store in-house, and the company still keeps close tabs on the quality of data being outsourced. Synovus turned over the maintenance of its data warehouse, but only after the outsourcer went the extra mile to prove itself worthy of the trust.

And neither company has relinquished the ability to monitor data quality. "If you outsource your ability to do this, you have gone too far," says Mark Sullivan, managing director at BearingPoint Inc. (formerly KPMG Consulting) in McLean, Va. "At the end of the day, it is still all about the data. If the data is flawed, no provider can give you good BI or satisfy your SLA [service-level agreement]." **41235**

Leon is a freelance writer in San Francisco.

BUILDING TRUST

A SPIRIT OF PARTNERSHIP pervades an outsourced business intelligence deal at Volvo Cars of North America LLC in Irvine Calif.

It all started in 1999, when Volvo turned a marketing data warehouse over to Harte-Hanks Inc. in San Antonio.

"This is one of a limited number of partnership arrangements we have," says Phil Bienert, manager of CRM and e-business at Volvo. "By this I mean we commit to a multiyear contract."

He says it also means that there's a built-in understanding that goes beyond anything in writing. "We state publicly that Harte-Hanks is our agent of record for customer analytics, and we expect that Harte-Hanks will give us additional

support on-site," says Bienert. "We expect that they will supply us with a steady stream of good ideas and that they won't rip us off. You can't put all this in a contract."

Analyzing customer data wasn't Volvo's core competency, so it made sense to find a partner. The automaker is very good at keeping track of its cars, but it needed to "build a customer-centric view of the world," says Bienert. And the company needed someone who could build and host all the pieces, the data warehouse and the applications, mining and analytics.

Bienert and his staff run simple queries and reports on demographics and sales using a dashboard developed at Harte-Hanks.

For more sophisticated analyses, such as predictive modeling to support new-vehicle launches, Volvo turns it all over to Harte-Hanks.

But Harte-Hanks' project managers keep the communication pipe open with Bienert and his database manager. It's

critical, says Bienert, to make sure that the Harte-Hanks team knows what Volvo's priorities are. "Trends change quickly in the auto business," he says. "What is hot today may not be tomorrow."

Bienert wouldn't talk about the value of the Harte-Hanks contract, but he says Volvo conducted an extensive study before signing the deal. "We determined that it would be significantly cheaper and more effective to go outside," he says.

Harte-Hanks' fees vary, ranging from \$5,000 to \$100,000 per assignment, according to a company spokesman. Assignments vary in duration and scope, but they typically involve things like customer segmentation analysis. Multiyear contracts with clients such as Volvo will involve several assignments.

Dan Rubin, vice president of analytics at Harte-Hanks, says the Volvo project is a popular one at his company. "Our people really want to work on this account. In fact, we have people here who have been on it longer than anyone at Volvo."

— Mark Leon

CASE STUDY





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Agriculture Cultivating E-business

Agribusiness is using IT to track key products and make the supply chain more efficient. **By Matt Hamblen**

THE AGRIBUSINESS industry hasn't been an IT leader, but it's making up for lost time with an ambitious effort to harness the efficiencies of e-business.

More than 60 leading agricultural companies recently created an integrated database of information about farm-related manufacturers, distributors and products. The new database will be used for tracking agricultural products (including potentially lethal materials) through the supply chain and serve as a building block for efficient e-business industrywide.

The companies involved, including Monsanto Co. in St. Louis and Dow AgroSciences LLC in Indianapolis, are members of Washington-based non-profit consortium Rapid Inc., which launched the Agriculture Industry

Identification System (AGIIS) on Aug. 11. Covansys Corp. in Farmington Hills, Mich., created the database and will manage it for the consortium, says Rapid CIO Rod Conner.

The main benefits to members will be efficiencies in generating orders and sales reports, as well as the ability to track inventory and be better stewards of products that can have major environmental impacts, Conner says.

Rapid had managed three separate industry databases with the help of three different contractors starting in 1995, and it combined them to form AGIIS. Over three years, AGIIS will cut the cost of managing those databases from \$3.5 million to \$1.9 million, estimates Conner. The savings will more than pay for the nearly \$1 million development and infrastructure cost of

AGIIS, he says.

Reducing costs was a big reason why Rapid's 15-member industry board pushed for the project, Conner says. But the board also wanted to help its members make better use of the data and to develop a central repository that would be useful to non-U.S. businesses.

"Agriculture is not a technology leader, typically, but now that our member companies are seeing the benefits of e-business and related technologies in other divisions of their companies, they are now moving [IT into] agriculture" activities, he says.

One side benefit is that with AGIIS, private businesses should be able to help homeland security officials and others prevent tainted food supplies from ending up on grocery shelves and track products such as fertilizers, which can be used to make bombs, says Brent Kemp, a senior analyst at Southern States Cooperative Inc., a Rapid member in Richmond, Va.

"After the Oklahoma City bombing, there was a great security concern about ammonium nitrate, and with AGIIS we can potentially get down to what lot of fertilizer was sold, where it came from, when, who picked it up and who was responsible for it," Kemp says.

"Our dream is that a consumer could look at a can of tomatoes, scan it and know every step in that can's life, from where the tomatoes were grown, to who canned it and potentially how much rain fell that growing season," he adds.

Consolidating Business

Mandates for such information are growing, Kemp points out. Manufacturers are beginning to require it from growers, while buyers in Europe insist on knowing which foods have been genetically altered.

Some companies have already reported that they've been able to eliminate paper-based processes as a result of using AGIIS, says Connor. St. Paul, Minn.-based Agrilience LLC, the largest agricultural cooperative in the U.S., told Rapid in August that it had processed 16,000 orders with the new XML capability in AGIIS, taking the standard time for a bulk order of products down from 12 minutes to less than 30 seconds, Conner says. That has enabled Agrilience to move some order entry personnel to other tasks.

Members of Rapid have a "keen interest" in not giving away competitive advantages, Kemp says, but members "in general are agreed that it's in everybody's interest to have a common

Aggregated Data

AGIIS combines the following databases:

- **The Electronic Business ID Directory**, with data about the locations of manufacturers, distributors' retailers and other businesses in the supply chain
- **The North American Purchaser Directory**, which has data about the buyers of agricultural products, including growers and farmers
- **The Product Directory**, which identifies products by Global Trade Identification Numbers and by packaging and unit of measure

frame of reference for tracking products and seeing who is shipping and receiving. The data itself doesn't provide a competitive advantage, but how you use it does."

Southern States, a farm supplier with 1,200 dealers and 68,000 customers, hasn't yet seen direct benefits from AGIIS, Kemp says, but it hopes that further enhancements, such as the adoption of Web services technology, will help feed bar-code information directly into warehouse systems.

The next steps for AGIIS include expanding its use to agricultural companies outside the U.S. and to companies in related industries, Conner says.

The main value of AGIIS is that it will be a building block for e-business initiatives in the agriculture industry, says Andrew White, an analyst at Gartner Inc. White says AGIIS shows that agribusiness is moving forward with e-business and supply chain technology, placing the sector behind the electronics industry but ahead of the apparel industry.

"The real purpose of this kind of project is not for one company to do better than any other but for the industry as a whole to take a big chunk of cost out of it," White says. The biggest benefit of AGIIS will be a reduction in transaction costs by making the data understandable to all users, he says.

That's the advantage of having a standard product directory. "When I say 'a black pen,' the question is always whether it's a pen that has black ink or one with a black casing. Now any number of companies can have a standard way of answering that," White says.

☎ 41484

LAW FIRMS OPEN UP

Traditionally secretive, law firms are using extranets to give clients access to documents and a window into their operations.

BY JEAN CONSILVIO



MATTHEW FAULKNER

LOSING A CLIENT IS ONE of the costliest mistakes a law firm can make. So a growing number of them are using extranets as a collaborative tool to offer their best clients the best service and keep them in the fold.

This is a big change in the world of law firms, which have tended to be low-tech and secretive. But now legal staffs and clients that are dispersed across the U.S. and overseas can work together by accessing documents on extranet-based knowledge management systems. Such extranets give clients a window into billing, transactions, calendaring, depositions and pleadings, for example.

Sutherland Asbill & Brennan LLP, an Atlanta-based firm with 350 lawyers, has built about 60 extranets, or data rooms, for 10 major corporations. "We just get so much enhanced value from the relationship with our clients" that Sutherland doesn't charge them for setting up and maintaining the extranet, says Kim Perret, director of marketing and communications. The firm saves money, too, because it doesn't have to rent space to store boxes of documents or bear the expense of sending people to oversee a document review or due diligence. There are also savings in travel costs, travel time and meals.

Now, a client traveling in a remote country needs only his laptop to view a document. "When he sends an e-mail that says, 'Love that extranet!' it's priceless," Perret says.

Big clients today want to be more involved in their cases than ever before. At the same time, cases are becoming more complex and require teams of lawyers from multiple disciplines, from intellectual property to litigation.

"Firms that are more team-oriented are doing very well, and that plays to what clients are looking for," says Michael Rynowecer, president of BTI Consulting Group Inc. in Boston.

Extranets are especially helpful when people from the business side, such as the employee-benefits team or the chief financial officer, are involved in a merger or an acquisition. With extranets, there's no need to search through boxes of documents; information can be found using Boolean, keyword or text searches.

San Francisco-based Pillsbury Winthrop LLC set up an extranet for the Los Angeles Unified School District to share documents and manage specific cases. The extranet runs on FirmConnect from Hubbard One in Chicago and is tied into Pillsbury's billing, CRM and docketing systems, as well as its document management system.

The school district pays 29 law firms \$28 million in outside counsel fees for cases involving discrimination, civil rights, eminent domain and construction, says Harold Kwalwasser, former general counsel for the school district. It's a complex operation because of the amount of people, documents and correspondence involved. The value of extranets, he says, is that the district doesn't have to replicate the archived files; they can be copied onto CD-ROMs.

"We have one source to go to get literally thousands and thousands of documents," says Kwalwasser. "It's a very efficient system."

Who Owns It?

The only problem with this "virtual world," Kwalwasser says, is the question of who keeps the hardware and software that stores the archives and runs the extranets. Law firms own the systems, "but these are documents I've already paid for," he says. "So if I say, 'Give me a copy,' I'll get a copy."

But what happens when the client wants to take charge and run the extranet? Kwalwasser, whose contract with the school district ended in June, says he had been looking into building a reverse extranet next year for the district's outside counsel to access. "We have collected this electronic [documents] file," he says, "and we wanted to cut our costs by not having people do research that we just paid some other firm to do."

Another way to approach the issue is to have the extranet and document repository hosted at a neutral site. "If we're working with a client on a case that has multiple parties, we outsource the extranets to a hosted facility," says Terry Crum, chief knowledge officer at Jones, Day, Reavis & Pogue, a Cleveland-based law firm that has more than 1,600 attorneys worldwide. For the time being, "we've decided to host those rather than put them on our internal network and invite people inside," he says. "It's simply a security issue."

Despite the benefits, legal extranets aren't widespread or automatically successful. According to a recent report from BTI Consulting, only 14% of 215 large corporations surveyed are using extranets provided by outside counsel. Those clients see extranets as a way to improve their own performance and for law firms to share the information they hold. But the report says that if the systems aren't robust or fail to meet clients' needs, clients won't see them as a collaborative win. **Q 41214**

EXTRANET OVERLOAD?

OF COURSE, IT'S POSSIBLE to have too much of a good thing. With so many legal extranets proliferating, just logging onto numerous portals for different cases can be a daunting challenge every morning.

The use of extranets as a tool to collaborate with clients is flourishing at some law firms, says Terry Crum, chief knowledge officer at Jones Day. "But in other law firms, we're

seeing a kicking back from that, and [firms] saying, 'Wait a minute - if I've got 15 matters going on . . . that means every day I've got to go to 15 places to look at information.'"

Crum says that when he was at Chicago-based Baker & McKenzie, "we went from zero to 500 extranets overnight," which created the problem of managing the growth.

So Crum says some firms are shying away from extranet mania and recognizing that they can respond to clients and work efficiently by using e-mail folders and keeping docu-

ments handy. However, that only exacerbates the legal community's existing storage problem with document-heavy e-mail systems, and it doesn't help clients manage their own data or see what the law firm is up to.

Ideally, there would be some standard way to view numerous extranets at once, but the technology doesn't exist yet. "The administrative capability of dealing with multiple extranets needs to be improved," Crum says.

- Jean Consilvio

NSTAR, the largest investor-owned utility in Massachusetts, hopes two IT projects will help it achieve a very aggressive goal: to boost its customer-service rankings into the top 25% of Eastern U.S. power providers over the next five years, says CIO Eugene Zimon.

That's pretty heady stuff, considering that Boston-based NStar was ranked last among 15 Eastern utilities in residential customer satisfaction this year, according to the J.D. Power and Associates 2003 Electric Utility Residential Customer Satisfaction Index Study. The study rates power quality and reliability, company image, price and value, billing and payment, and customer service.

NStar has made improvements in some of these areas. Last year, customer outage hours were slashed by 35%, and the length of outages was reduced by 27%, according to the company's 2002 annual report. And by year's end, NStar's 200-plus call center representatives were answering nearly 90% of all customer calls in 30 seconds or less — a 25% improvement over 2001.

The utility company implemented a fuel-cost adjustment on Sept. 1 that should lower the average electric bill for Boston-area residential customers by about \$4.50 per month. In addition, NStar was the only utility in Massachusetts to achieve the service-quality goals set by the Massachusetts Department of Telecommunications and Energy, thereby avoiding

CASE STUDY

NSTAR

CHARTER: Massachusetts' largest investor-owned electric and gas utility, serving 1.3 million residential and business customers.

2002 REVENUE: \$2.72B

2002 EARNINGS: \$179.4M

any financial penalties.

NStar customers have noticed the positive changes. While NStar hasn't yet improved in its relative ranking, it did increase its score in the 2003 study by J.D. Power by five points (on a scale of 60 to 130) compared with the 2002 survey.

Now the company is pushing hard on two IT projects aimed at further enhancing customer service: the installation of a new CRM system (see sidebar) and an upgrade of its outage

management system.

The latter effort involves an upgrade of software from M3i Systems Inc. in Longueuil, Quebec. NStar executives expect the system to help the company improve its analysis of and response to outages.

NStar began rolling out the upgraded M3i system in April. In June, the company extended it with improved messaging capabilities at call centers to give customers more detailed information about the expected length of outages. Now NStar is focusing on the third phase of the upgrade, which adds a graphical front end that plots customer outage calls on a graphical representation of the company's electricity distribution network. It will also identify the utility equipment that's the most likely cause of an outage.

Using algorithms that are built into the software, NStar engineers will be able to analyze more quickly the causes of and relationships between power outages, as well as calculate how long a particular outage is expected to last and identify which customers are affected. Previously, dispatchers had to review a list of outages on a tabular or spreadsheet-type screen.

The previous version of the M3i system relied on rules-based systems to help engineers analyze the potential causes of outages and determine how quickly they could be repaired. "But that model breaks down in a high-volume situation — like during a major snowstorm — since work on switches and transmitters constantly changes," Zimon says.

Once NStar finishes testing the electronic plotting capabilities this fall and puts the system into production early next year, engineers will be able to draw a polygon around, say, 10 outages "and evaluate how they might be related to each other," says Peter Dion, manager of systems support at NStar.

Energizing Call Centers

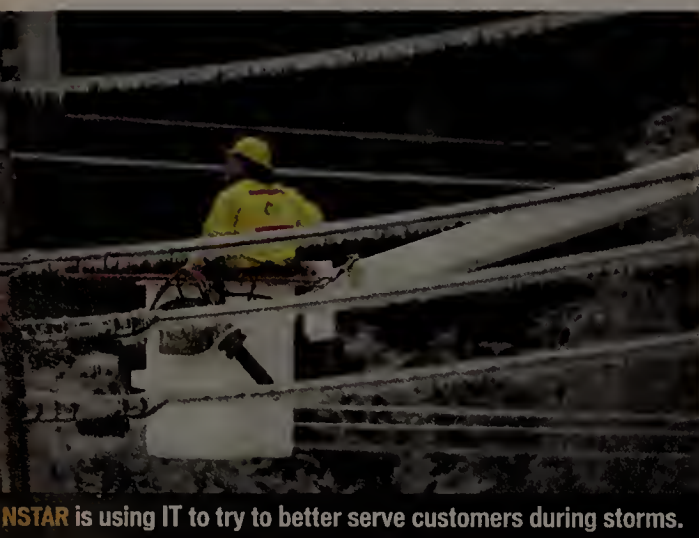
NStar is in the final stages of installing an Oracle CRM system to improve customer service, regardless of what channel a customer uses to contact the power company. The browser-based system uses computer/telephony integration (CTI) technology to allow NStar's 200-plus call center representatives to respond to customers who call in, use e-mail, fax or visit the company's Web site.

The Oracle software, which will serve as a front end to multiple back-end systems, is being phased in through year's end and will run on two Unix-based Sun Fire servers from Sun Microsystems Inc. It will provide NStar with capabilities not currently offered through its mainframe-based customer information system (CIS), including the ability to view customers on a total account basis rather than by meter or address, says CIO Eugene Zimon.

The CRM system was customized by Cap Gemini Ernst & Young. The Oracle software is being installed by Bangalore, India-based Wipro Ltd., which is doing the customization work in India and the implementation in Westwood, Mass.

The CTI technology is expected to help NStar reduce the average time it takes to handle a call by 15 to 30 seconds per call, says Penni Conner, vice president of customer care at the company. In addition, training call center agents to use the new system is expected to take just 18 hours, compared with three or four weeks on the CIS system.

— Thomas Hoffman



AP PHOTO/ROBERT BUKATY

NSTAR is using IT to try to better serve customers during storms.

Coping With OUTAGES

This electric utility hopes IT will improve its response to blackouts and boost customer service from rock-bottom levels. **By Thomas Hoffman**

Also next year, customers will be able to use an interactive voice-response system to find out the cause, status and estimated time of restoration for an outage, Zimon says.

Zimon and Dion declined to say how much money NStar has invested in the outage management system upgrade. But it's expected to deliver several key benefits, such as allowing for a better assessment of the cause of an outage, which in turn enables faster and more accurate dispatching of repair crews. Plus, the system is expected to free up the dozen or so dispatchers who work during a typical day shift so they can spend more time analyzing the causes of outages and determine how best to correct them.

During storm conditions, when multiple outages occur more frequently, Dion said he expects that the new system may help NStar respond to power interruptions up to 20% faster.

There are several techniques that electric companies use to pinpoint the sources of failures. Some companies have integrated geographic information systems with customer reports of outages and linked that information with their network diagrams, says Jill Febowitz, an analyst at AMR Research Inc.

Rick Nicholson, an energy industry analyst at Meta Group Inc., says NStar "is doing some very smart things to address the outage issue, but they are probably not unique" in plotting outage calls electronically.

Nevertheless, NStar executives are excited about the potential effect the system will have on improving customer service.

"We're setting a standard here," says Zimon. "This is designed to work in both a high-volume [outage] and sunny-day situation." **41478**

New CIO at the Trading Desk

Barclays Capital PLC, the 6-year-old investment banking division of London-based Barclays Bank PLC, competes with some very large and experienced old-time financiers for a chunk of the trillions of dollars in the worldwide market for fixed-income investments, such as government bonds. **NANCY GLOOR** joined Barclays Capital as CIO for the Americas last month to lead the development of electronic trading systems for that effort. She comes with 17 years' experience at Goldman Sachs Group Inc., where she most recently was managing director for fixed-income, commodities, currency and finance technology for all of Europe. Gloor recently talked with

Computerworld's Jean Consilvio about the investment banking business and her new role at Barclays.

Why did you join Barclays?

We're a relatively new organization and have very aggressive goals to be [at the] top of all of the markets we're in. For example, in our electronic trading market, we just started with TradeWeb [a multidealer platform] in March, and we're already leading the [industry rankings].

What do you hope to accomplish in the coming year? I follow the goals of the organization, which are to further globalize the firm. We need to move the

robust technology platforms that we've been rolling out in Europe and the U.S. into the next phase in the U.S., add more products and turn our attention to Asia. The other thing we're focusing on is flawless execution, which is very important. We're a relatively small organization, so for us to be competitive, we have to do what we do very well.

What changes do you see for the platforms?

In the U.S. last year, Barclays Capital opened its new North American headquarters in midtown Manhattan. The new trading floor standardized the infrastructure technology. We are now following that with standardized software in all regions, which

will make it much easier for us to deploy new applications and put new product lines on those applications.

What challenges have you come up against working in fixed-income management? One of the challenges is that in the very commoditized, cash-type product, like in the government [bonds] area, margins have shrunk over the last few years. To be profitable, you have to really be smart about how much it costs to trade, how quickly we can price things, how much it costs to process everything through the back office. Those are things we need to be able to automate wisely because the cost of doing business has to come down for them to be profitable.

What advice would you give anyone in IT who wants to specialize in an industry, as you have during your career? Technology plays such a key and integral

part in our business that you have to have a lot of context. You have to have deep knowledge of the business, and that's where you bring the value. It's not just your technical skill that's important, but it's your knowledge about a particular trading desk, product line or process, like risk or pricing. We have [IT] people sitting on the desks with the traders and the salespeople who understand intimately what they do every day, and they're the ones developing the software for them.

So business and technology work as one? When I was interviewing here, somebody said, "I don't really see the difference between technology and business." I don't either. They're one in the same. I don't know how you trade bonds without technology. You couldn't. It's not possible. The challenge for technologists is to be equally competent on both sides. **41726**



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BRIEFS

Banks' IT Spending To Hit \$60B in '07

IT spending in the banking industry will reach \$60 billion in 2007 as banks continue their efforts to cut costs and increase revenue, according to an IDC survey of 27 U.S. banks.

Respondents said they will devote most of their IT spending to delivery channels and back-office technology, while their investments in systems that support retail and wholesale product lines will increase at a slower pace during the next four years. Framingham, Mass.-based IDC said respondents' priorities included meeting regulatory requirements, CRM, risk management and attracting new customers.

Nordson Names Peet New CIO

Nordson Corp. last week appointed Shelly M. Peet as CIO at the Westlake, Ohio-based company. She joins Nordson following a 13-year career at TRW Inc. in Cleveland, where she most recently was director of information services. Peet holds degrees in systems engineering from Case Western Reserve University and a degree in physics from Wittenberg University. Nordson makes precision dispensing equipment and has 3,500 employees in 30 countries.

Entergy, Keane Sign \$12.3M Deal

Keane Inc., an IT consulting firm in Boston, has signed a \$12.3 million, five-year outsourcing contract with Entergy Solutions Ltd., a subsidiary of Entergy Corp., an \$8 billion New Orleans-based energy services company. Keane will support Entergy Solutions' application development and management using on-site and offshore IT teams. The core applications handle retail business functions, including forecasting, pricing and deal management, risk scheduling and settlements.

PAUL GLEN

Stop 'Gathering' IT Requirements

OVER THE YEARS, I've come to the conclusion that one of the most destructive notions circulating inside technical groups involves "gathering requirements."

For decades, virtually everyone in the industry has accepted that the first phase of every IT project should be to gather requirements from business users. At least in theory, it should be the point of

departure for all our efforts. (Of course, it's also the phase of the project that's most often skipped.) So now that our success rate for IT projects has risen to the still-dismal level of about 25%, perhaps we should question some of this time-honored wisdom.

As I travel the country for consulting and speaking engagements, I often ask, "What are the main causes of project failure?" And invariably one of the first answers is something like, "There's a failure to gather good requirements."

And when I ask why projects get bad requirements, the answers are, "Users won't tell us what they want," or "We don't ask good questions," or "What they told us they wanted turned out not to be what they really wanted." But I think that the problem is more subtle than any of those answers.

The problem with gathering requirements is right there in the word *gathering*. What images does it conjure? For me, it's an image of a harvest, of a group of people standing among endless rows of vines picking ripened grapes and carefully placing the bunches in a bin. For others, it might be an image of a child collecting sea-shells on the beach or of a group of

people huddled together at a town meeting. What's common in all these images of *gathering* is that there's something out there to be collected, like crops, shells or people, and that those things are already whole and complete.

So if we're gathering requirements, we assume that they must be out there, ready to be assembled like a roll of coins. Our problem is finding and selecting the right ones. So if the users don't tell us what they really

want, we should grab them by the ankles, hold them upside down and shake them until those pesky requirements fall out on the floor. The only logical conclusion is that if we don't get good requirements, we haven't shaken enough.

Of course, this is ridiculous. Requirements don't exist out in the ether just waiting to be discovered. They aren't out there whole and finished. Clients and users aren't playing an expensive game of hide-and-seek with us. Usually, the clients' pockets are empty. Most of the time, they don't exactly know what they require. And even if they do, it's in the form of incomplete and inconsistent ideas that can be only partially articulated. Proj-

ects rarely start out with clear objectives or requirements; they begin in confusion and ambiguity.

The other problem with gathering requirements is that it suggests subservience or disinterested passivity on the part of the IT group. It gives the impression that the job of a technical team is to take orders like a waiter who couldn't care less what you eat and then deliver the cooked meal. Technical teams with this attitude rarely deliver high-quality service.

So what's the alternative? Obviously, projects need solid requirements on which to build technology.

We should think of a set of requirements as being like a multilateral treaty among a group of nations. Representatives of nations negotiate treaties by seeking out points of agreement, acknowledging constraints, compromising and trading off. The forging of a treaty is an active and difficult process of creation. No one would suggest that you "gather paragraphs" to write a treaty.

So we must negotiate requirements among the many stakeholders whose positions and interests need to be acknowledged. There are the business interests of executives who fund projects, of course. There are the utility needs of the users who will work with the systems every day. There are also the technical needs of those who build, deploy and support those systems. The list can go on and on.

Successful projects begin not with a harvest, but with a difficult set of discussions on what should be done. If you stop trying to gather requirements and start negotiating them, your projects will yield richer crops. **41565**



PAUL GLEN is the author of *Leading Geeks: How to Manage and Lead the People Who Deliver Technology* (Jossey-Bass Pfeiffer, 2002) and principal of C2 Consulting in Los Angeles. He can be reached at info@c2-consulting.com

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IT Careers: The Next Generation Data Center

There was a time when data warehousing and data centers were primarily a hardware issue or deep research embedded within data management. Not so with the Next Generation Data Center, where data mining and statistics come out of the research cave into full blown operational imperatives. You've seen the results – a list of books that you just might find interesting, based on your past orders.

With more than one million people working in the data management field, the new role for data mining and business intelligence indicates a major shift of web development, software, data mining (statistics) and text mining into the job category. This segment of the information technology industry is moving up in the food chain; the analytics category is considered one of the top value plays with over half of all implementations achieving full payback within two years or less. And, expenditures are expected to grow by better than 33% over the next four years.

Among the kingpins of mining and putting to work data to achieve bottom line results is Amazon.com. Ken Collins, director of data warehouse for Amazon.com, says the most critical issues are data quality, scaling and "deployment of mining insight throughout our infrastructure. I would expect that companies that can make deployment of sophisticated mining models and algorithms across a n-tier open systems stack would do very well."

Wayne Thompson, product manager for data mining technology at SAS Institute in Cary, N.C., says that in the past 24 months, data management has shifted from a tool kit product to a solution of best practices resulting in new business capabilities "such as credit scoring, bioinformatics, marketing automation and money or fraud identification. It's now a solution within a larger enterprise," says Thompson, "which allows more focus and a more consumable product." SAS, long known for its analytical focus, holds a 38% share of the data mining market.

In the past, data mining resulted in quantitative points – age, gender, zip code, how many cars you own. The changes Thompson sees are quantifiable and predict future behavior. Another advancement is the use of statistics with text. "Whether in business or research, much of the information we receive is in the form of text. At SAS we've come up with a way to combine textual with typical numeric data to come up with better predictive models," Thompson says.

The industry is also seeing data management move from research into a collaborative work environment. Working with business leaders and the IT professionals who deploy data systems within larger enterprise or customer relationship management systems, data management professionals are developing models based on business trends.

As these shifts occur, the shift in skills required is equally broad. The collaborative environment requires written and verbal communication abilities, as well as business understanding. The requirement for solid statistical skills (as evidenced by master's or doctorate degrees in mathematics, statistics, computer science or even data mining) remains. Standard languages – PMML (predictive modeling markup language), which is an XML representation – is the base, but experience in C, C++ and JAVA also are important. "We also need people who can sit with a business manager, understand the business processes and develop models," Thompson says.

As with other IT job categories, the opportunities exist in IT companies such as SAS. They also are increasingly available in non-IT firms who are customizing and fully exploiting the data mining tools to analyze and predict. Thompson also recommends direct exposure to data management/mining tool kits, such as SAS Enterprise Miner or Text Miner, and attending conferences such as M2003, to be held Oct. 13-14 in Las Vegas. "It's an excellent forum

that focuses less on statistical skills than on how tools are being used to affect business," he says.

Amazon.com's Collins adds, "If ever there was an opportunity for IT to be proactive for business, this is it. Professionals must understand data mining and statistics, their customer or company's business and help map the two together. It is also essential that we be relentless in the pursuit of data quality and metadata for the high business value information we steward. And of course, nothing replaces solid data warehouse modeling, design and optimization skills."

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Computer Systems Analysts:
Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations using techniques such as structured analysis, data modeling, mathematical model building and sampling with Strong experience in single and multi dimensional data warehousing applications using SAS, Business Objects, Cognos, Micro Strategy, Informatica, MSDTS, Oracle Clinical, Oracle, C, PL/SQL, FORMS 4.5, UNIX, WINDOWS XP/NT.

Requirements: Master Degree or its equivalent in Business, Math, Management Information Systems, Engineering or related field and at least one year of experience or Bachelors degree or its equivalent in Business, Math, Management Information Systems, Engineering or related field and at least three years of experience performing the listed duties.

Computer Programmers Analyst:

Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store, locate, and retrieve specific documents, data, and information using with Strong experience in single and multi dimensional data warehousing applications using SAS, Business Objects, Cognos, Micro Strategy, Informatica & MSDTS, Middleware MQ Series, MQSI, J2EE technologies, Web Methods, C++, Visual C++, MFC, OLE, SDK, COM, JAVA, JSP, EJB, ASP, VB, Active-x, .NET, and Developer 2000.

Requirements: Master Degree or its equivalent in Business, Math, Management Information Systems, Engineering or related field and at least one year of experience or Bachelors degree or its equivalent in Business, Math, Management Information Systems, Engineering or related field and at least three years of experience performing the listed duties.

Interested candidates should send resumes to ATTN: Human Resources, Objectsoft Group Inc., 401 N. Michigan Avenue, Suite 1200 Chicago, IL 60611 Email: resumes@objectsoft-group.com FAX: 253-423-6635 OBJECTSOFT GROUP EOE.

Boehringer Ingelheim Pharmaceuticals, Inc. has immediate openings in its Ridgefield, Connecticut facility for the position of Senior Software Engineer.

Develops and implements systems using a variety of technical tools, identifies problems or opportunities to increase effectiveness and productivity and reduces operational costs through optimal use of information systems.

Must possess a Master's degree or equivalent in Business Administration or a related field and three years of work experience in an IT field. In the alternative, a Bachelor's degree in Computer Science, Electrical Engineering or a related technical field and at least five years of relevant business experience in marketing and operations would also be acceptable. Experience to include college coursework/project or work experience with: Documentum, WDK, DFC, Web PublisherDesktop, Java, EJB, Servlets, JSP, Web Logic, Oracle, VB, COM/DCOM, IIS, XML, HTML/DHTML, and JavaScript; and developing client/server and web applications.

Resume and/or cover letter must reflect each requirement above and specify reference code AD-GCD/GC0503 or it will be rejected.

Forward resume to BI Staffing Center, PO Box 534, Waltham, MA 02454. EOE.

QA Engineer II (Denver, CO) - Design, develop, implement, test & troubleshoot newly developed or redesigned products, systems, or equipment of moderate scope & complexity. Perform test design & analysis for applications developed via various SW programming languages & tools including Java, C/C++, & Oracle. Plan & execute test methodologies using UNIX, Oracle, PL/SQL, & EDI (Electronic Data Interchange) applications. Provide technical support. Design test result reports & report defects. BS Comp Sci, Eng, or related +18 months related exp + working/theoretical knowledge of Java, C/C++, Oracle, Unix/Unix Scripting, PL/SQL, & EDI. \$71,393/yr. M-F, 8-5. Resume only to Workforce Development Programs, PO Box 46547, Denver, CO 80202. Ref. Job#CO5058187.

Software Engineer: Develop, Test & Implement new applications using Java, HTML, Java Script, VB Script, DHTML, Oracle, PL/Sql, XML, Weblogic or Apache Tomcat. Analyze current procedures & systems to refine & convert the data to programmable form. Study existing systems to evaluate effectiveness & upgrades systems presently in use. Monitor implemented systems for issues & update as necessary. Strong skills in Objected Oriented Analysis and Design; Data Modeling with thorough knowledge of relational database concepts; Writing database procedures, triggers and functions. Must have 2 yrs exp. and B.S. in CS/Sci. or 2 yrs. related exp. 60K/yr. 8A-5P, 40hrs/wk. Submit 2 resumes to Case#200202671, Labor Exchange Office, 19 Staniford St., 1st Fl., Boston, MA 02114.

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NET2S is a leading International e-business, information technology, and communication infrastructure consulting firm. We are currently seeking for the following positions:

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- IT Risk Mgmt Security Architect
- Sun One / Siteminder Architect
- Business Objects / Cognos Developers
- NET Architect

All positions require BS/MS degree with a minimum of 2 to 3 years of experience in the field. Must possess excellent communication skills as well.

NET2S, 82 Wall Street, Suite 400, New York, NY 10005; Fax: (212) 279-1960; Phone (212) 279-6565; or Email: jobbus-ny@net2s.com

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If interested, please email a resume to icjobs@idg.com or fax to (508)935-4600. Please include code ITC922 in the subject line.

ITcareers

Software Developer - Design code and test financial models and their integration into a trading environment. Analyze, review, and rewrite program logic to increase operating efficiency to adapt programs to new requirements and migrate them as new standards arise. Design and test trading applications and write and rewrite program logic. Use experience in C++, Visual Basic, Excel and database administration. Will utilize basic knowledge of finance and economics. Requirements includes a Bachelor's degree or equivalent in Computer Science, an Engineering discipline or related field and two years of pre- or post-degree work experience in the job offered or related field of software development. Experience must include use of C++, Visual Basic and database administration. Applicants must have unrestricted authorization to work in the United States. Salary \$75,000/year. 40 hours/wk. Respond with two copies of resume to Case #200203201, Labor Exchange Office, 19 Staniford St., 1st Fl., Boston, MA 02114

SW Dev Engineer (Omaha, NE) - Partner in a team environment to design, develop, code, test & debug new SW or significant enhancements to existing SW using Oracle databases, PL/SQL, WebLogic Server, Java, JDBC, & the J2EE/JDK environment. Write Java servlets using EJB, JSP, & JavaScript. Perform maintenance on existing SW using Oracle, PL/SQL, Java, & HTML in Windows NT, UNIX, & Linux environment. Apply principles, theories & concepts & use methodologies, tools, doc processes & test procedures to complete projects. BS Comp Sci, Eng, or related + 2 yrs related exp + working knowledge of: Oracle, PL/SQL, HTML, WebLogic Server, Java, J2EE, JDBC, EJB, JSP, Java Script, Java Dev Kit (JDK), Java Servlets; & Win NT/UNIX/Linux. \$72,580/yr. M-F. 8-5. Must have proof of legal authority to work permanently in U.S. No calls. Send cover ltr & resume to: Madhavi Bhadbade, Coordinator, NE DOL, P.O. Box 94600, Lincoln, NE 68509-4600. Ref. Job#TREL5-RPS5A-01300.

Software Engineers & Programmers: Analyze, design, test and implement specialize software applications for e-commerce, Web, Client Server technologies, Legacy systems and distributed apps. in Weblogic, Corba, Apache, Mainframe, ASP, J2EE, Siebel, PB and related technologies utilizing appropriate RDBMS including Oracle and DB2. HR, Instcomp, Inc., 906 Lacey Ave., Suite # 206, Lisle, IL 60536. EOE.

Systems Analyst. B.S. in Comp. Sci. or equiv. + 3 yrs. rel. exp. Exp. to include C/C++, UML, Python, XP, JavaScript, SQL, STL, MacApp, Mac OS X (carbon), and .Net. Send resumes to Robert Long, MetaCommunications, Inc., 1210 S. Gilbert St., Iowa City, Iowa 52240-4506.

Senior Software Engineer-Platform Services: Lead and participate in specification, design, development and support of company products including the overall architecture, component interfaces and communication schemes, client and server-side programs written in Java and C++. Develop Oracle, SQL Server and LDAP database schemas. Assist with development of project plans and schedules. Follow rigorous software engineering standards including developing product requirements, functional and design specifications and adhering to coding standards. Lead efforts to identify and resolve any product performance issues. Mentor junior engineers. Requirements include a Master's degree or equivalent in Computer Science, an Engineering discipline, Mathematics or related field and three years of work experience in the job offered or related field of software engineering using C++, or a Bachelor's degree or equivalent in Computer Science, an Engineering discipline or related field and five years of progressively responsible experience in the job offered or related field of software engineering using C++. Applicants must have unrestricted authorization to work in the United States. Salary \$78,000/year. 40 hours/wk. Respond with two copies of resume to Case #200203134, Labor Exchange Office, 19 Staniford St., 1st Fl., Boston, MA 02114

Software Engineer - Provide software engineering consulting services to clients for Storage Area Network (SAN) systems that may include systems manufacture by Compaq, EMC and/or Hitachi, or others. Design and implement management and monitoring SNMP software for the SANs and other IP devices. Configure and test SAN devices including, but not limited to Brocade Switches, Foundry 68000 routers, Crossroad routers, Cisco and Tape Libraries. Will use software languages including Java, CORBA, HTML, Java servlets, Visual Basic, Pascal, JSP, SML, JMS and networking protocols such as SNMP, TCP/IP, HTTP, HP Overview, etc. Work includes SAN/LAN programming for high scalability. Masters degree in CS and two years of experience or Bachelor's degree and five years of experience on software work including SANS systems. Experience must include: Design, develop, implement, test SANs systems; work with routers and switches such as Cisco routers/switches, Foundry 68000 switches; work on SAN/LAN solutions; Must be willing to be assigned to unanticipated client sites throughout the United States. Hours: M-F, 8:00 a.m. to 5:00 p.m.; 40 hrs/wk. Salary: \$85,384/year. Send duplicate resumes to: Job Order # 2003-336, P.O. Box 989, Concord, NH 03302-0989.

Seeking qualified applicants for the following positions in Memphis/Collierville, TN: **Senior Technical Analyst.** Research, evaluate, implement and coordinate changes to computer systems/applications. Requirements: Bachelor's degree or equivalent in computer science, math, engineering or related field plus 5 years of experience in systems/applications development, including programming. Experience with IMS DB/DC, Cobol II and TSO also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Sibi George, FedEx Corporate Services, 1900 Summit Tower Blvd., Suite 1400, Orlando, FL 32810. EOE M/F/D/V.

SOFTWARE ENGR: Analyze, design & develop web-based applns & systems. Specific duties include: (i) design, develop & configure websites & systems per client specs using VB, ASP, MTS, Visual Source Safe, Java, Visual Interdev, DCOM, COM+, Active X, ADO and IIS; (ii) act as Program Lead for client's projects; (iii) perform system analysis, coding & testing; (iv) develop components to integrate Call Center QA tools w/Kronos; (v) maintain & perform sys. optimization & compliance w/system reqmnts of health care industry; (vi) perform intensive data analysis & design; & (vii) develop identity & account mgmt systems based on client's reqmnt & spec. Bach. degree in Comp. Sci. or Electrical Engrng + 3 yrs exp. in position offered or as a Prog. Analyst or Software Developer/Consultant reqd. Must have: (1) 2 yrs of exp. w/VB, Java, J2EE, JavaScript, VB Script, ASP, COM, COM+, Active X, ADO, XML, SQL Server, SOAP, Seagate Crystal Reports, KRONOS, Visual Interdev & Visual Source Safe as well as working w/iBaan CRM components (incl. Baan EIA and BOIS as well as iBaan CRM); (2) 2 yrs of health care industry exp., including exp. w/compliance standards (HL7, CCOW, HIPAA); (3) ability to adhere to industry-wide software development standards, incl. SEI-CMM, SEI-PSP; & (4) high mobility preferred. 40 hrs/wk, 8 am - 5 pm, \$64,240/yr. Qualified applicants please submit resume to: McKeesport CareerLink, Attn: ES Manager, 345 Fifth Avenue, McKeesport, PA 15132-2600. Please refer to Job Order No. WEB 360618.

ObjectWin is looking for Programmer/System Analyst or other IT professionals. Applicants must have BS or equivalent. Skills in ASP.Net, B2B, VB, Java, HTML, VB.Net, XSL, CSS, MS CMS, SSL & MS certified preferred. Competitive wage. Apply at: skarande@objectwin.com. EOE.

Techgene Solutions has openings for System Analysts or Software Engineers. Candidates must have BS with experience in Cobol, JCL, Oracle, SQL, etc. Travel may be required for some positions. We are small but stable. Competitive salary. Please apply at bapujik@yahoo.com. EOE

OmniPros, a worldwide provider of software solutions seeks motivated IT professionals specializing in: Java, J2EE, Oracle, WebLogic, Webmethod, Vitria, Tibco, Portals, Oracle CRM (Technical, 11i) Oracle Mfg (Technical/Functional, 11i), Oracle Finance (Technical, 11i), Business Development/ Technical Operations Management Positions are located in Chicago, IL. Please e-mail resume to careers@omnipros.com, fax resume to 408-944-0719, or mail resume to: OmniPros Ltd. 99 W. Tasman Drive, Ste 205 San Jose, CA 95134

Systems Administrator sought by computer s/w development firm in Jacksonville, FL. Must have Bach in Comp Sci., Engg or equiv and two yr relevant exp in designing, developing and implementing LAN, WAN, VPN and telephone networks; Windows/Linux-based DNS, DHCP, WINS Servers/Domain controllers; SQL Server 7.0/2000; and Oracle 8i/9i for OLAP & OLTP databases. Respond to: HR Dept., Intelligenxia, Inc., 4905 Belfort Rd., Ste 110, Jacksonville, FL 32256.

System Software Engineer - Work as part of software development team to write software for automatic ultrasonic imaging systems, including motion control, instrument setup, data acquisition, operator interface, image display and processing, and data analysis. Focus on instrument control and data acquisition software and graphical user interface design. Interface with customers, in-house sales staff, hardware development engineers and manufacturing engineers to specify, customize and implement software modules. Provide accurate estimates of required time to complete software tasks. Use Microsoft SourceSafe for version control. Provide on-site support for installation and testing of system software as required. Interface with customers as required to assist with support and service. Program in C/C++ and Visual C++ under Windows NT/98. Use object oriented design, motion control software and GUI knowledge. Requirements include a Bachelor's degree or equivalent in an Engineering discipline, Physics or closely related technical field and three years of work experience in the job offered or related field of system and control software engineering. Applicants must have unrestricted authorization to work in the United States. Salary \$74,838/year. 40 hours/wk. Respond with two copies of resume to Case #200202405, Labor Exchange Office, 19 Staniford St., 1st Fl., Boston, MA 02114

Software Engineers: Software life cycle development in Microsoft Development tools suite including C#.Net, Oracle RDBMS tools suite, SQL Server, DB2, COBOL and related tech. to develop array of apps. including secure Client Server/Web based HR, Communication and Government apps. Complete job description or to apply contact HR, 3761 Venture Dr., Bldg. 100, Suite 240, Duluth, GA 30096.

MECHANICAL ENGINEER
Require BS in mechanical engineering and 3 yr. exp. in position offered. Must have taken courses in thermodynamics, hydro-mechanics, and heat transfer theories and research exp. in energy field. Resume to Arbin Instruments, 762 Peach Creek cut Off Rd., College Station, TX 77845.

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**Programmer Analyst
(Micro/Web) -
Multiple Openings**

Structured systems analysis, design, development, testing, quality assurance, implementation, integration, maintenance and support of integrated client-server based systems for business, financial, banking, manufacturing and other commercial business application systems in a multi-hardware/multi-software environment using centralized or distributed relational database management systems, 4GLs (Fourth Generation Languages) and other GUI (Graphical User Interface) front-end tools. Analysis, design and development of client-server applications using object-oriented methodology. Bachelor's Degree (or equivalent) in Computer Science-Math/Engineering/Science/Business-Commerce and 1 yr. experience in job offered or as Software Engineer/Systems Analyst are required. Must have appropriate combination of skills as follows: 1 of A and 2 of B; or 2 of A and 1 of B; or 3 of A. A includes Oracle, Sybase, Informix, SQL Server, Progress, Ingres, Access and Proxy Server; and B includes PowerBuilder, Visual Basic, MS-Windows, Visual C++, JAM, APT-SOL, SOL FORMS, ESOL/C, GUPTA SOL, Progress 4GL, Informix 4GL, Ingres 4GL, C, Java, Lotus Notes, HTML, CGI, IIS, ASP, Front Page, Perl and Java Development Kit (JDK); High mobility preferred. 40 hrs/week, 8 am - 5 pm. \$67,995 - \$78,000 per year. Qualified applicants should contact or send resume to Mon Valley Regional CareerLink, Attn: Actg. CL Program Supervisor, Donora Industrial Park, 570 Galiffa Drive, Donora, PA 15033. Refer to Job Order # WEB 360639.

Engineer
Pitney Bowes Inc. has an opening in its Shelton, Connecticut office for an Engineer. Develop new concepts and prototypes in the areas of intelligent networked devices and information appliances for mail and messaging and develop novel embedded system solutions. Must possess at least a bachelor's degree or its equivalent in Electrical Engineering, Computer Science or a related field and relevant work experience, including college coursework/project and/or work experience with USB software driver development and hardware interfacing; embedded software development experience at the API level of various handheld and wireless devices such as the iPAQ, Dolphin and Symbol scanners; embedded Java programming experience to author device independent software interfaces for use in enterprise level integrated systems; troubleshooting wireless connectivity issues at the hardware and API level (including vendor interfacing and verification and validation of system built to specification); and hardware level debugging of wireless and wired components. Resume and/or cover letter must reflect each requirement above and specify reference code E/MZ or it will be rejected. Forward resume to Robbin Drew Elliott, Pitney Bowes Inc., One Elmcroft Road, Stamford, CT 06926-0700.

COMPUTER/IT

Quality Assurance Analyst (Test Automation Specialist). (Troy, MI). Req. Bachelor's degree (or higher) or equiv. foreign educ. in comp. science, bus. admin., stats., or related eng. field, & 2 yrs.' exp. in the job offered or 2 yrs.' exp. in execution of SAP R/3 quality assurance review & testing procedures for Materials Mgmt. (MM), Prod. Planning (PP), Sales & Distribution (SD), Finance (FI), and Human Resources (HR) modules using Mercury Interactive tools. All stated exp. must include: creation & maintenance of automated test scripts using QuickTest; & use of Test Director to manage & administer testing process. Analyze, define, & develop quality assurance standards, practices, & conventions for comp. systems. Execute SAP R/3 quality assurance review & testing procedures for MM, PP, SD, FI, & HR modules using Mercury Interactive tools. 40 hrs./wk. 8:00-5:00. Apply with resume to LaWanda White, Delphi Corporation, 5825 Delphi Drive, Troy, Michigan 48098. EOE. Reference #0613 when applying.

Blackbaud, the leading end-to-end data management and technology solutions provider for the nonprofit community, offering software, services and e-solutions, is seeking a Senior Statistician based in Charleston, South Carolina to generate and supervise development of custom response models for non-profit organizations, particularly around fundraising. The candidate will create multi-variant regression models that determine the likelihood to make a certain type of donation and the capacity to make a donation to particular non-profit organizations. Requirements are a Master's degree in Economics, Statistics or related field as well as four years of experience as a Statistician or Research Analyst using SAS tools for statistical and regression modeling. If interested, please submit resume via the Careers Section of www.blackbaud.com. Please put reference number-0905ELG in the cover letter when applying. EOE

SENIOR SOFTWARE ENGINEER to lead a team in the design, development and support of web-based application software and databases using J2EE, SQL Server, Oracle, Java, Servlets, Swing, Applets, JSP, EJB, JavaScript, JDBC, RMI, CORBA, JavaBeans, HTML, XML, ASP.NET, VB.NET, VBScript, XSL, XSLT, ASP, VB, ADO.NET, ADO, DAO, RDO, Visual Studio, COM and Visual Source Safe under Windows operating systems. Require: M.S. degree in Computer Science/Engineering, or a closely related field with 2 yrs of exp in the job offered or as a Programmer/Analyst. Extensive travel on assignments to various client sites within the U.S. is required. Competitive salary offered. Apply by resume to: Srinivasa R. Manne, Methodist Consulting Services, Inc., 1517 W. Irving Blvd., Irving, TX 75061; Attn: Job VP.

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- User Support Specialists
- DBA's
- Business Analysts
- Project Leaders

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Millennium Software, Inc. has immediate opportunities: Computer Programmers, Programmer/Analysts, Systems Analysts, Software Engineers / Consultants, DBAs, Architects and Project Managers with 4 or more skills in following environments: Java, EJB, Shell Scripts, SAS, PLC, Textra, XML, SOL, mqPCX, PowerBuilder, Rational Rose, Relational Databases, Perl, SAP, Primavera Team Play / P3e, Teradata, MO-Series, IMS, Adabase, Natural, WebSphere, Oracle Workflow, FileNet eprocess, Floware Workflow engine, C/C++, HTML, Visual Basic, COBOL, DCEDFS, AutoCAD, Six-Sigma. B. S. or M.S. req'd. + 1 yr. exp. depending on position. Frequent travel and relocation. Send confidential resume and salary requirements to: 2000 Town Center, Ste 300, Southfield, MI 48075 Visit our website at www.webmsi.com.

Immediate opportunities for both entry-level and experienced Programmers, Programmer Analysts, Systems Analysts, Software Engineers, DBA's and Software Consultants with three or more of the following skills: Java, Shell Scripts, SAS, PLC, Textra, XML, SQL, DB2, mqPCX, Oracle, PowerBuilder, Rational Rose, Sybase, Perl, PeopleSoft, Crystal Enterprise, Crystal Reports, Teradata & MS Visual Studio. B.S. or M.S. degree or foreign equiv. in relevant field req'd + 1 yr. exp. depending on position. Frequent travel and relocation. Send confidential resume and salary requirements to: HR, Saras America, Inc 32605 W. 12 Mile Rd, Ste 180 Farmington Hills, MI 48334 Visit our website at www.sarasamerica.com.

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in WebSphere, WebLogic, iPlanet, Oracle, Dreamweaver and JBuilder. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of WebSphere, WebLogic, iPlanet, Oracle, Dreamweaver and JBuilder. Salary: \$66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: BECS/CareerLink Program Supervisor, Indiana County CareerLink, 300 Indian Springs Road, Indiana, PA 15701, Job No. WEB362143.

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in PowerBuilder, PL/SOL, StarTeam, PowerDesigner and Rational Rose. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of PowerBuilder, PL/SOL, StarTeam, PowerDesigner and Rational Rose. Salary: \$70,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Site Manager, Armstrong County CareerLink, 1270 North Water Street, PO Box 759, Kittanning, PA 16201-0759, Job No. WEB362147.

SOFTWARE ENGINEER to design, develop, maintain and implement applications to process online transactions using Java, JSP (STRUTS Framework), JDBC, EJB, JMS, JavaScript, Oracle, XML, Rational Rose, Clear Case and WebSphere under Windows NT operating system. Require: Master's degree in Computer Science/Engineering, or a closely related field with 2 yrs of exp in the job offered or as a Programmer/Analyst. Competitive salary offered. Apply by resume to: Dave Bloomquist, Global Software Development Services, Inc., 10 South 5th St., Ste. 700, Minneapolis, MN 55402; Attn: Job RM.

Client/Server Analyst: Louisville, KY: Designs, implements and supports two-tier and three tier client/server infrastructure in a multi-server WAN/LAN environment with NT and Network server support at the O/S level. Requires a Bachelor's degree and at least one year of experience in the above. Reply with resume to: IT Job, P.O. Box 6351, Louisville, KY 40206-0351.

Multiple positions available for computer professionals including Software Engineers, Programmer Analysts, Systems Analysts, Computer Programmers, Network Analysts, Systems Administrators, Software Developers, Website Developers, DBAs, etc. Locations vary. Openings now w/leader in the field including TEKsystems, Onsite and Allegis Group. Req's: Bach., MS or equiv. in relevant field, may require exp. Travel and/or relocation possible. E.O.E. Competitive salary & benefits. Send resumes to: J. Brigham, Allegis Group, HR; 7301 Parkway Drive, Hanover, MD 21076, ID Job No. FL1003.

PROGRAMMER/ANALYST to analyze, design, develop and maintain application software in a client/server environment using Power Builder, Visual Basic, Erwin, Install Shield, Crystal Reports, Oracle and Pro*C under Windows NT/2000 and Linux operating systems. Require: B.S. degree (or equivalent) in Computer Science/Programming, or a closely related field with 2 yrs of exp in the job offered; Each 3 yrs of progressively responsible work exp in the field will be considered equivalent to 1 yr of college education. Extensive travel on assignments to various client sites within the U.S. is required. Competitive salary offered. Apply by resume to: Shri Gargal, Syspro Technologies, Inc., 13010 Morris Road, 6th Floor, Alpharetta, GA 30004; Attn: Job VT.

Programmer/Analyst to design, develop, implement, maintain and support application software in a client/server environment using Visual C++, Windows SDK, MFC, ATL, Visual Basic, COM/DCOM, ASP, XML, HTML and MTS on Windows Platforms. Require: BS Degree in Science/Engineering or a closely related field with 2 years of progressively responsible experience in the job offered or in the related occupation of Software Engineer. Extensive travel on assignments to various client sites within the US is required. Competitive salary offered. Apply by resume to: Ravi Kandimala, Everest Computers, Inc., 900 Old Roswell Lakes Parkway, Suite 300, Roswell, GA 30076, Attn: JobBS

Software Analyst II
Duties: Perform modeling, evaluation, testing & design/analysis of s/w. Min Req: Masters/Info Tech w/ concentr. in Mgt Info Tech; 3 yrs exp. in s/w design/analysis using Dynamic C, C++, Visual Basic, including at least 3 yrs exp in embedded s/w design & implement. Demonstrated proficiency in GPS receiver tech, cell. comm. tech, implement. of NMEA protocol & integration of TDMA and Microburst based cell. comm. modules. 40 hrs/wk. salary dep on quals.. Must have proof of legal authority to work in U.S. Submit resume by mail only to GTS, 5385 Mark Dabbling Blvd, Ste 101, Colo. Springs, CO 80918.

Indo-American Connection LLC has openings for Business Analysts with at least two years of experience and Programmer Analysts and Software Engineers with at least two years of experience in the following: Java, JavaScript, HTML, C++, Oracle Database, Visual Basic, PowerBuilder, IIS, SQL Server, MS Access, HP Unix, and Win. NT. Some positions require a Bachelors Degree, others Masters Degree. Equivalent degree and experience is also accepted. Exc. Pay & Bnfts. Mail resume to: HR Dept., Indo-American Connection LLC, 27 Timber Road, Edison, NJ 08820.

Merrick Systems, Inc. provides software and consulting services for the energy industry leveraging e-business and m-business technology. Senior System Analyst: Analyze, architect, develop, integrate and Test Multi-Tier Enterprise Application using VB.NET, XML Web Services, PB, C++, UML, Rational Rose, J2EE, Jaguar CTS and EAI technologies using database in Oracle, Sybase and SQL Server. Need Bachelor's degree in Computer Sciences or Engineering or related and 2+ years of industry experience. Mail to: 4801 Woodway #100E, Houston, TX 77056 or E-mail: resumes@merricksys.com

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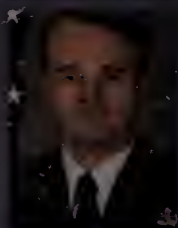
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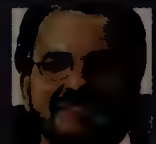
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IBM Hosting

bel Systems Inc. in San Mateo, Calif., to offer CRM services in this manner (see story at right).

An IBM data center in Boulder, Colo., houses the systems, which users can access remotely on a pay-as-you-go basis. The service will gradually be expanded to other IBM facilities around the world, and U.S. companies could eventually have their day-to-day business applications residing on servers located in places such as India.

Mike Riegel, manager of IBM's e-business hosting services, said that outside of regulated industries such as health care and financial services, the use of offshore data centers can work.

"There is a lot of fear, uncertainty and doubt about cross-border delivery," said Riegel. "But when you really dig into the regulatory environment, there aren't many impediments to it."

Multinational companies

run data centers all over the world. But the idea of turning part or all of a company's data center operations over to an offshore provider is in its infancy, according to offshore service providers and analysts.

Some companies are beginning to use offshore service providers to remotely manage and monitor their data centers in low-cost countries while keeping the hardware and data in North America and Europe. But most offshore users are

like Lancaster, Pa.-based Armstrong World Industries Inc., which focuses its offshore operations on application development.

Armstrong, which has 59 plants in 14 countries, turned to an offshore developer to help it cut costs and get out of bank-

ruptcy brought on by asbestos-related lawsuits.

Edison, N.J.-based Intelligroup Inc., which has an offshore development center in Hyderabad, India, is responsible for development and maintenance of Armstrong's SAP AG ERP system, said Mark Young, Armstrong's director



MERCURIO: "It's important that IBM keep this service fresh."

Siebel Takes Hosted CRM Plunge With IBM

Two years after it pulled the plug on its first hosted CRM software offering, Siebel Systems is once again entering that market, this time through a deal with IBM.

Siebel and IBM last week said they plan to jointly offer a hosted set of new CRM applications aimed primarily at small and mid-size companies. Dubbed Siebel CRM OnDemand, the hosting service is due to become available this quarter and will be run on systems at IBM's data centers.

Customers will be charged a monthly fee of \$70 per end user and will be able to customize the applications themselves, without needing help from consultants, according to Richard Gorman, Siebel's senior vice president of products.

Gorman said Siebel also hopes to entice larger companies to use

Siebel CRM OnDemand for small software deployments that can later be expanded. OnDemand is built on a separate architecture and has its own user interface, but it can be integrated with and upgraded to Siebel's full-fledged applications, he added.

Planitax Inc., an Emeryville, Calif.-based company that sells tax software, is beta-testing the Siebel/IBM offering. Chris Stauber, a former Siebel employee who is now chief technology officer at Planitax, said the company is looking at using Siebel CRM OnDemand to replace an existing set of hosted CRM applications from an unidentified vendor.

The CRM software Planitax is already using won't meet the company's future needs, Stauber said. Siebel is still adding functionality to its hosted offering but

has more sophisticated capabilities, including built-in analytics, he added. "The basis for the application is the enterprise version of their software," Stauber noted. "What holes there are are mostly cosmetic."

Siebel launched a Web-based CRM service called Sales.com in 1999, but it scrapped the unprofitable venture two years later. The joint offering with IBM will compete against CRM application service providers such as Salesforce.com Inc., a San Francisco-based company that claims 100,000 end users for its hosted software service.

Liz Roche, an analyst at Meta Group Inc., said teaming with IBM could help Siebel attract users that have steered clear of hosted CRM installations.

— Stacy Cowley, IDG News Service

of program management.

Young said the offshore arrangement has yielded cost savings through reduced head count and the flexibility to increase or decrease his resources as needed. He said he also looked at hardware outsourcing but opted instead for

internal improvements, such as server consolidations, to reduce his costs.

Still, Young said he continues to review vendor outsourcing options, such as IBM's Virtual Server Services. "When you are trying to become financially stable, you

are always looking for cost [reduction] opportunities," he said.

Paul Mercurio, CIO at Exxon Mobil Travel Guide LLC, a subsidiary of Exxon Mobil Corp. in Park Ridge, Ill., has been using IBM Virtual Server Services for the past year. They were initially offered to customers that wanted to port applications to IBM zSeries mainframes running Linux.

Mercurio, who uses the service for his company's Web production and publishing, said the cost is as much as 30% below any alternative. "The key thing from my perspective is... it's important that IBM keep this service fresh [and] new" as technology improvements are made, he said.

With respect to the location of services, Mercurio said it doesn't matter where a resource is. "What matters is that you have a path to the resource and that there is a sufficient amount of that resource available," he said.

Q 41838

Some Systems Administration Moving Offshore

Early adopters of offshore outsourcing of IT systems, as opposed to application development, are focusing on remote monitoring, database administration and other systems administration functions.

But analysts and offshore service providers say they aren't seeing firms relocating data center hardware offshore. Companies maintain that although such a move probably isn't worth the migration expense, they may use hardware located offshore through an outsourcing vendor.

"Moving the machine is really unnecessary," said Suresh Gupta, a consultant at Capco, an

Antwerp, Belgium-based financial services consulting firm. He sees network monitoring functions going offshore as part of an "extended team" approach. For instance, a company in India could manage a network during overnight hours in the U.S.

But there are many elements affecting a decision to outsource infrastructure operations offshore, including network reliability, geopolitical concerns and security. It remains "more of a niche and still a slowly evolving process," said Richard Matlus, research director at Gartner Inc. in Stamford, Conn.

But offshore aside, infrastruc-

ture outsourcing is growing in the U.S., and offerings are expanding. For instance, Sun Microsystems Inc. last week said it had struck an agreement with Houston-based SchlumbergerSema, the IT services arm of Schlumberger Ltd., for outsourced, pay-as-you-go services. Schlumberger will use Sun servers to provide services targeted at the energy, finance, telecommunications and government sectors. The servers can be hosted at the customer's site or Schlumberger's data center.

While these data center services can be provided anywhere, "the barrier is the customer comfort to sending something off-

shore," said Ashif Dhanani, director of utility computing at Sun.

Kumar Mahadeva, CEO of Cognizant Technology Solutions Corp., an offshore services provider in Teaneck, N.J., said he's seeing business processes such as claims processing go overseas, resulting in the creation of offshore data centers to support those operations.

Andre Mendes, chief technology integration officer at Public Broadcasting Service in Alexandria, Va., said he believes that locating data centers anywhere in the world is becoming almost inevitable as technology improves. "The only bottlenecks left behind are geopolitical ones," he said.

— Patrick Thibodeau

FRANK HAYES ■ FRANKLY SPEAKING

Ugly Screens

THERE ARE SOME UGLY SCREENS in your applications. Your users know them all too well. They're the screens where users have to copy information with a pencil and paper, or where one wrong keystroke will wipe out 15 minutes of work, or where the application can suddenly freeze for no apparent reason.

Your developers know those ugly screens, too. They've tried to fix those screens for years. But the code is a kludgy, convoluted mess, and simple fixes won't work. Ripping those screens out and making them right would cost a bundle, which you don't have to spare. Besides, users have lived with those screens, ugly as they are, for a long time — and if they have to, they can keep living with them.

So if you can't fix an ugly screen, what can you do with it?

Document it. Don't pretend that these eyesores don't exist. Keep a list of them. Track what fixes were tried and didn't work — and when and why. That way, you'll always know how long it's been since someone last tried to fix one. If the application is ever completely rewritten, you won't forget and inadvertently preserve that ugly screen's logic.

Give your most junior developers a shot at it. Hey, they don't know it's impossible to fix. If they come up with an ingenious solution, great. If not, at least they'll get a taste of the worst your legacy code has to offer. That's something you can be sure they didn't learn in school.

Bless the work-around for it. Your users have probably figured out the best way to deal with each ugly screen. You've probably been too embarrassed to include those work-arounds in documentation and training. Get over it, and get the users to write up those work-around descriptions. And who knows? Once your developers know exactly what the users do to dodge ugly screens, they may even figure out a fix.

Put a bounty on it. Nothing encourages developers to take another look at problem code like a cash reward for coming up with the idea that finally fixes it. But save your bounties for longstanding problems, or you may end up with "problems" in new code that just happen to be prime candidates for bounties.

Ask users how it should work. Maybe you're going about this the wrong way — trying to fix logic that no

longer needs to be so convoluted. If users can simplify the screen's functional definition, you might be able to make it work. But be careful to manage expectations. Don't tell users you're fixing it — just that you're trying.

Junk it. OK, virtually junk it. Ask a small group of users to try using the application without touching that screen. If they can't, you're no worse off. If they can, maybe you can decommission that screen entirely.

Find out how important it is to the users' managers. If it's top-of-mind for a manager, you can discuss what it will cost to do this expensive fix right. If he didn't know about it, your question demonstrates that you're being proactive about solving his users' problems. Either way, it helps you gauge how big a deal it really is.

Make it a poster child for your IT budget. It's bad. It should be fixed. It's not your fault; you inherited it. It costs users time and effort, and that means money. Fixing it will take some major dollars. Sure, you just began a new fiscal year. But start a campaign now, and you'll have a well-primed pump when the next budget cycle comes around.

If nothing else works, ship it overseas. Face it: You can't fix this code in-house. And your CEO wants you to dip a toe into offshore outsourcing. Your offshore partners won't love you for sending your nastiest, thorniest problems as their first projects. But if they can fix those ugly screens, you'll know you got your money's worth. ☎ 41543



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Logging Out the Hard Way

This control-freak IT manager just *has* to have the same rights that his mainframe programmers and operators have. Then one day, the entire transaction system vanishes suddenly for 400 users. "Even stranger, a crisis had occurred, and the boss wasn't demanding a status report," says a pilot fish on the scene. Apparently, the boss had had trouble logging out, so he used a very risky, very restricted, warned-about-in-the-docs utility. "He logged himself out — and took 400 users with him," says fish. "He let us take away his unnecessary authorities after that. No arguments."

Slowdown

Payroll user's new 2-GHz PC gets an error message when he runs a particular report, so IT pilot fish searches the knowledge base for a solution. "It says, 'Run the report on a machine with a processor speed under 1 GHz, or open as many programs as possible to slow the machine down,'" groans fish. "Where are the 386s when you need one?"

SHARK TANK

for any employee failing to patch his PC. Then IT security calls

this pilot fish and accuses him of using an unpatched machine. Can't be, says fish — mine's patched. It turns out to be a conference-room PC that fish logged onto for a demo. "Who owns support of those machines? There are 100 of them in the company," fish asks get-tough security guy. "He quickly realized the horrible security exposure was now *his* problem — and got off the phone in a hurry."

Just What She Asked For

The entire network goes out, and panicked IT applications manager calls the help desk. "Her mission-critical department was being impacted by our unplanned total network outage, and she demanded a wireless laptop to connect to the downed network," says support pilot fish. "We didn't have the heart to tell her that it wouldn't work. Last I heard, a tech-support staffer was going upstairs to drop off the laptop."

Oops!

Blasted by the latest worm, this company vows dire consequences

Talking Trash

A virus destroys the data on one of this company's critical servers, so IT pilot fish calls off-site for the backup tapes. They're sitting in an open box on the data center floor, ready for the restore in the morning, when the night cleaning crew arrives. "No one ever thought a loosely stacked set of 4mm tapes could look like trash," sighs fish. "Now the cleaning people are only allowed to throw out stuff that has been tagged as garbage."

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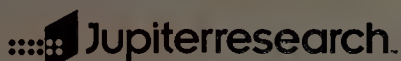
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